

CIO

BUSINESS TECHNOLOGY LEADERSHIP

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BY KIM S. NASH

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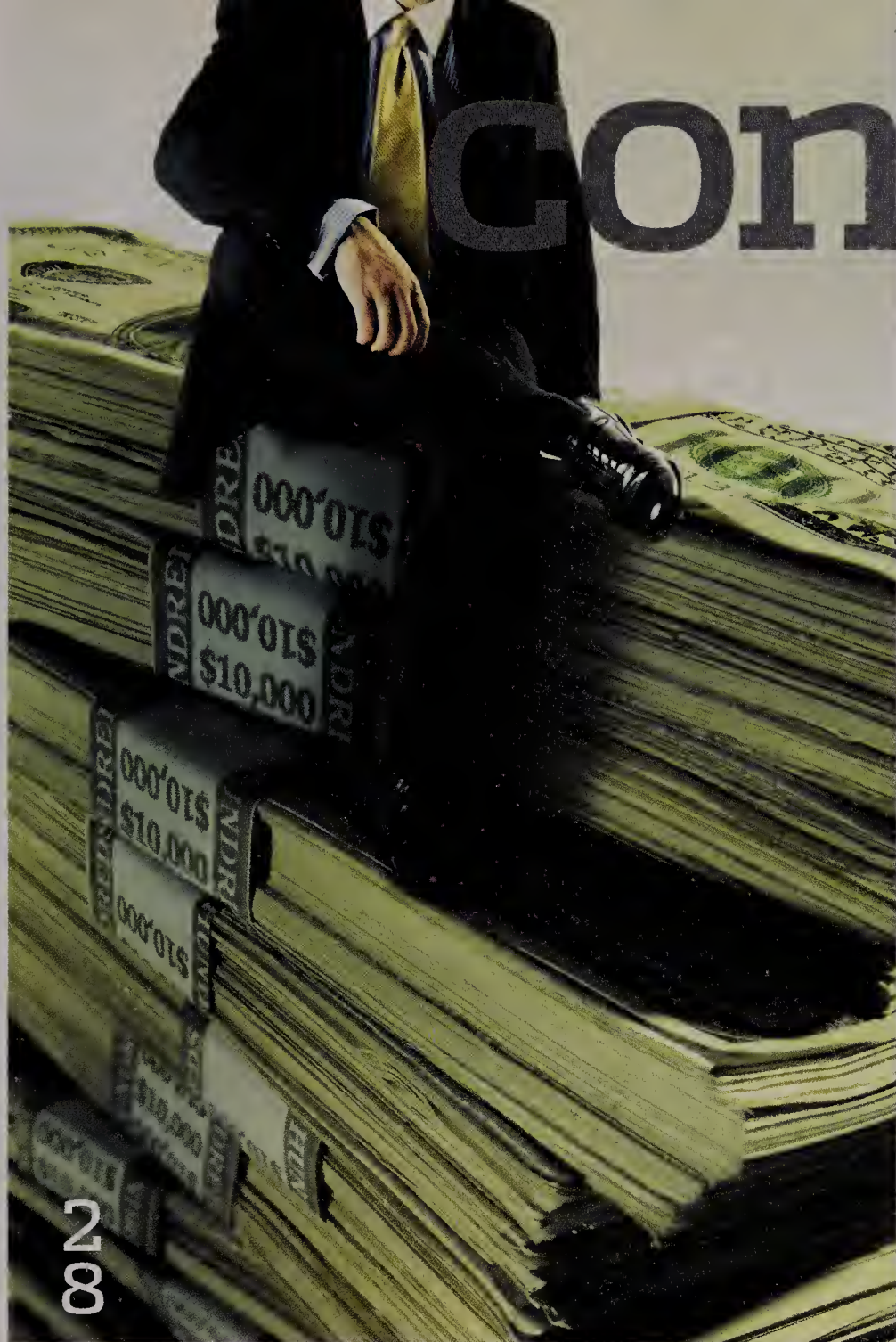
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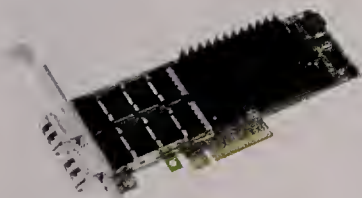
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Does your company welcome new ideas?



It's conventional wisdom that big organizations aren't as innovative as smaller ones. At best, innovation is harder for them. At worst, big companies crush innovation before it interferes with the status quo. But conventional wisdom is rarely reliable.

This was the discussion topic on day two of the June 2008 Seattle Innovation Symposium (read about day one in my blog "Digital Natives in Our Midst" at http://advice.cio.com/abbie_lundberg/digital_natives_in_our_midst).

Participants quickly dispensed with the idea that big companies can't innovate. It was hard not to, given the presence of Boeing in the room. But they also agreed that the institutional rigor often imposed on large, complex entities "leads to rigor mortis," as one person quipped. Large organizations are built to avoid risk, and innovation requires risk taking.

Rob Austin, coleader of the symposium, theorized that one real difference when it comes to innovation may be the notion that large organizations more easily fall into compromise among multiple stakeholders, while at small firms, there's usually a single figure—the founder—who forces a decision.

Suresh Kotha, professor at the University of Washington's Foster School of Business, raised the question of why some incumbents survive radical technological change and others fail. New ideas in established companies are like a virus, he suggested; corporate antibodies will try to kill them. Organizational barriers include structural and cultural inertia; complacency; a lack of incentives; internal politics; control issues; payoff uncertainty; and lack of knowledge in the new realm.

One conclusion: Large organizations need the ability to handle not just diversified technologies but diversified modes of organization as well. Skunkworks are a sign that the official structure can't really handle innovation, said Daniel Hjorth, professor of entrepreneurship and innovation management from the Copenhagen Business School.

So what is the upshot? If your company is a large industry incumbent, innovation isn't likely to just happen. You need to find fault with your existing products or operations and then encourage your internal critics to create something new while keeping the corporate antibodies in check. For most organizations, this will be an unnatural act.

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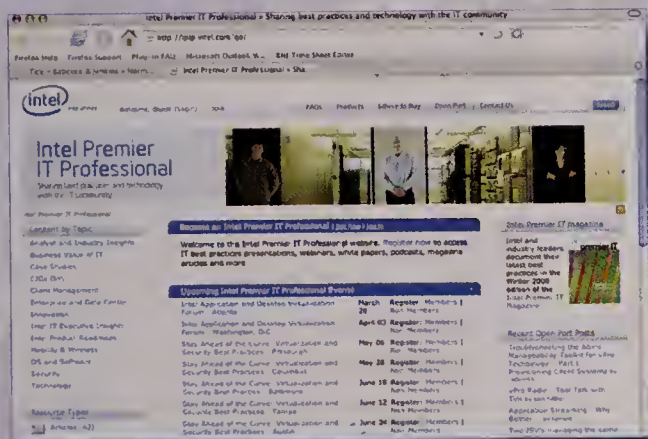
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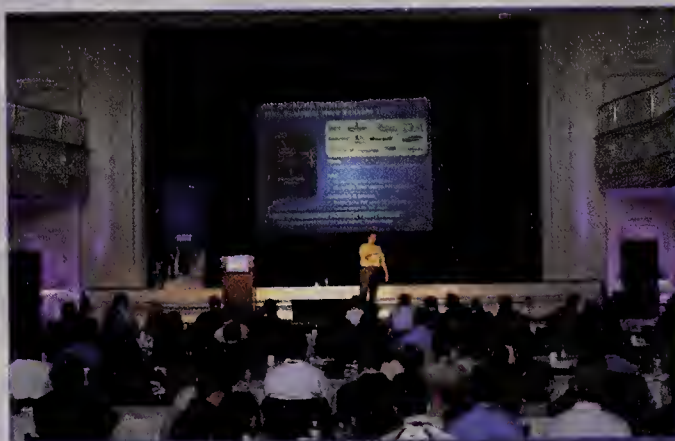
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A Defining Moment

How would you define the CIO role?



Don't you always find it easier to describe a friend or colleague than to describe yourself? I do, and that is why it was so fascinating to hear the response to a question posed during my recent panel at the CIO Leadership event.

The panel focused on the CEO-CIO relationship and how the CIO role is evolving. Halfway into it, Jonathan Zittrain, chair of Internet governance and regulation and principal of the Oxford Internet Institute, Oxford University, and

cofounder of Harvard Law School's Berkman Center for Internet and Society, asked the audience, "If I were to describe the role of the CEO in three words, it would be 'runs the company' or 'buck stops here'; CFO is 'writes the checks' or 'guards the bank' COO is 'trains on time'; and CSO is 'locks the doors.' How would you describe the CIO's role in three words?"

Now imagine a room filled with 300 people, and when that question was asked, all you heard was dead silence. Finally, I chimed in and said, "Enabler and facilitator." Maybe not boos from the rafters, but not wide acceptance. Monique Hines, former VP of Information Services of United Airlines, said, "Propelling the business" and "maestro of the orchestra." Better, but not roundly accepted.

Since there was no clear answer and it was still on my mind, I posted the same question on LinkedIn. The responses came flying in:

- ▶ Andre Mendes, CIO, Special Olympics: "Courageous, innovative, reliable."
- ▶ Larry Bonfante, CIO, USTA: "Facilitator of progress."
- ▶ Christopher Barber, CIO, WesCorp: "Technologist, businessman, psychologist."
- ▶ David Zeppieri, CIO, OPIC: "Career is over."
- ▶ John Keast, COO, Vegas.com: "Adviser, team player, deliver...or die!"
- ▶ Jeri Dunn, VP and CIO, Bacardi: "Resourceful, resilient, reliable."

These are a few of the responses, ranging from pessimistic to optimistic, leader to facilitator. The one thing that became clear is that it isn't clear. If the role of the CIO is truly about "business technology leadership," then shouldn't there be consensus on the role's definition? My vote is for "business technology leadership." Please send me your thoughts at mfriedenberg@cio.com, and maybe we can finally define the CIO role in a simple and clear manner.

Michael Friedenber, President and CEO
mfriedenberg@cio.com

P.S. If you're an IT executive and would like to join the CIO Group on LinkedIn, we'd love to have you. Go to www.linkedin.com/e/gis/48613/72371B7A68D0.



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InBox

Selling Security

Is selling security still a negative sell ["How to Sell Security," June 15 issue, www.cio.com/article/367913] once the acceptance of the need for it is commonplace?

Using writer Bruce Schneier's automobile example—where manufacturers embed security products like antilock brakes—what happens if you are offered the choice of just a driver-side airbag, driver and passenger air bags, or side-impact air bags? Once acceptance occurs (air bags are a fundamental need) then we revert back to utility theory/ROI/standard value judgments.

This is happening already. Just a few years ago, you had to sell customers on why they need an IDS or security monitoring. But now many customers are accepting the fundamental need for security (either due to risk or compliance). As such, vendors now need to sell "why *my* IDS" or "why *my* security monitoring."

Think about IDS/IPS technology. Most folks who have used several commercial or open-source platforms will agree they all are pretty much adequate.

Of course, most vendors haven't figured this out yet.

TOM LE MON

Don't Fear Digital Natives

I work with a lot of Digital Natives ["Digital Natives in Our Midst," July 1, advice.cio.com/abbie_lundberg/digital_natives_in_our_midst]. When I speak of intellectual property protection they listen and I need not speak about it

twice. It is their older peers to whom I have to repeat that lesson (no printing the actual network diagram, complete with FW locations and IP addresses on marketing brochures; no giving away product road maps at trade shows...).

Digital Natives are innovating and, as always, it's not about the technology and how tricked out they are. It's about how open their minds are to listening to everyone's ideas. It's collaboration like never before, and every CEO in IBM's recent survey of 765 global chief executives reported the lack of collaboration as a core problem holding back the growth of their companies.

It's open sourcing of brainpower. And as much as they use far more emerging technologies than we do, they also only use the technology to get things done.

Digital Natives are in our midst—and we need to start listening to them. They will change our world.

JACKIE BASSETT
CEO, BT Industrials

The Future of H-1B Visas

Subsidizing an industry with lower-paid, foreign labor keeps wages down ["No More H-1B's," July 1, www.cio.com/article/389263]. American students will naturally find easier ways to make money in nontechnical career paths, limiting the size of the IT workforce.

If you want to encourage American students to pursue engineering and computer sciences, stop creating market conditions that artificially lower salaries. When salaries were rising

during the dotcom boom, so were enrollments into computer science degree programs.

This isn't rocket science, this is a corporate subsidy. Subsidies have always had very predictable outcomes.

ROY LAWSON

I teach computer science at a large community college in Minnesota. Since the peak of the dotcom boom in 2000, we have seen enrollments in computer science plummet. The major reason students don't go into the field is because they don't think they can get a job. I know this because I talk to students daily.

Now, for the first time in many years, the job market for computer science in Minnesota has improved significantly. There are more jobs than there are graduates.

As the word gets out, we are beginning to see a reversal of our declining enrollment. For the first time in many years, our enrollments are beginning to improve.

Government policies (like those around the H-1B visa) that give corporations incentives not to hire American students will hasten the decline of technical expertise in this country.

Kudos to Gary Beach for this courageous editorial!

ROBERT NIEMANN

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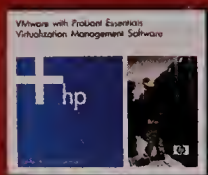




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trendlines

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NEW * HOT * UNEXPECTED



Even With \$4 Gas, Demand for Telework Unmet

TELECOMMUTING Even as gas prices hit historic highs in the U.S., most Americans can't telecommute, according to a recent survey released by advocacy group Telework Exchange.

Of those surveyed, 92 percent said they believed their jobs could be done from home. But only 39 percent of the respondents say they were able to telework at least part-time. Nearly all the survey respondents were culled from the 377 registrants of the Telework Exchange website.

"Telework Exchange registrants—

both government and private-sector employees—do have a clear interest in telework," says Cindy Auten, Telework Exchange's general manager, in an e-mail. "We find that this is an accurate sample of the full population."

Even with people in much of the U.S. paying \$4 a gallon or more for gas, telecommuting seems to be facing an uphill battle. Telework Exchange has pushed for more telework options for U.S. government workers, but a survey released in March by

Continued on Page 12



Indian Outsourcers Gaining Global Share

OUTSOURCING India's top outsourcers are growing their share of the global IT services market as customers break large, multibillion orders into smaller chunks, and customer confidence in Indian providers grows, according to research firm Gartner.

Gartner says the top six Indian offshore service providers, including Satyam, Wipro, Infosys, Tata Consultancy Services, Cognizant and HCL Technologies, accounted for 2.4 percent of the total worldwide IT services market last year, compared with 1.9 percent in 2006. All have headquarters in India, except Cognizant, which is U.S.-based but delivers services mainly from India.

India's top outsourcers have delivered high quality at low cost and have put in place human resources practices that let them hire and manage large staffs, says Gartner senior research analyst Arup Roy. "We expect the share of these companies to continue growing," he says.

Other analysts agree that India's top outsourcers are increasing their share of the IT services market. Most of the growth comes from their strength in application development and maintenance, said Siddharth Pai, a partner at outsourcing consultancy Technology Partners International. Indian companies have close to 40 percent of this market, he says.

But challenges loom. Multinational services companies like IBM and Accenture have set up Indian operations to take advantage of lower staff costs. Indian outsourcers must also grapple with growing staff costs, attrition, the appreciation of the Indian rupee against the dollar, and their dependence on the U.S. market.

However, India's top outsourcers are expanding into other countries to reduce their dependence on the U.S. Attempts to diversify into new services like remote infrastructure services have also been successful.

—John Ribeiro



Karaoke, Anyone?

GADGETS Coming to a cubicle near you: a portable karaoke system that allows would-be crooners to belt out a tune no matter where they are. And you thought sitting next to someone blasting their iPod was bad.

In October, Japanese toy maker Takara Tomy plans to release the Hi-kara, believed to be the world's smallest karaoke system. The Hi-kara is a complete portable music system in a 7-centimeter cube. A 2.4-inch LCD screen on the front of the box displays a video and song lyrics, and users can hear the music and sing through a custom headset that includes a microphone. Or, if desired, it can be hooked up to a pair of speakers so that multiple people can hear the song.

White and pink models of the Hi-kara, which is aimed at children of around eight years old, will go on sale in Japan on Oct. 18 and will cost 10,500 yen (US\$97).

Songs can be added to the system in cartridges that will cost either 2,100 yen for 10 songs or 3,675 yen for 20 songs. Takara Tomy plans to offer both preloaded cartridges and prepaid blank ones, onto which users can download songs of their choice through a planned Internet site.

Four AA batteries will provide enough power for about four-and-a-half hours' use.

Takara Tomy hopes to sell 500,000 units of the Hi-kara during its first year on sale.

Just imagine the endless possibilities for an office sing-along. Simon Cowell, are you listening?

—Martyn Williams

Telework

Continued from Page 11

CDW-G found only 17 percent of federal employees telecommuting.

Surveys have shown that management resistance to telework remains a barrier, Auten says. "What we found was that as managers become exposed to/involved in telework, their approval of the operating practice improves significantly," she adds.

"Encouraging managers to telework is a critical step to achieving overall agency telework adoption. Further, agencies must educate and train management on telework drivers and benefits."

Thirty-eight percent of those surveyed said they're willing to pay any amount for gas. More than eight in 10 respondents said they rely on their vehicles to get to work, with only 13 percent using carpooling and 10 percent using public transportation.

However, 78 percent said they were making lifestyle changes—such as limiting car trips—because of high gas prices. Another 62 percent said they were spending less in general and 53 percent said they were eating out less often.

An average, a U.S. resident spends \$2,052 a year for gas to commute and spends 264 hours on the road, according to the survey.

"I think that we are seeing a tipping point for people to start looking for other alternatives to commuting," Auten says.

However, employees may have to prove to managers that they can remain productive. "It is also important that employees focus on measurable outcomes to demonstrate continued or increased productivity," she says. "It is helpful to use project schedules, key milestones, regular status reports and team reviews."

—Grant Gross

Data Breach? What Data Breach?

SECURITY When it comes to reporting a data breach, **78 percent of IT decision makers** don't believe the general public should be informed, according to a recent survey by content security specialists Clearswift.

WHO SHOULD BE INFORMED OF A DATA BREACH? I.T. DECISION MAKERS SAY:

Affected customers and partners >> **95%**

Industry regulators >> **42%**

The police >> **35%**

The public >> **22%**

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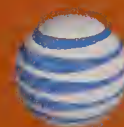
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HOW DOW CHEMICAL KEEPS ITS I.T. COSTS LOW

STRATEGY Companies that are planning cost-cutting measures could learn a lesson from Dow Chemical. "We look at cost management from a strategic point of view," says Mack Murrell, Dow's vice president of IT. "I've got a three-to-five-year look ahead on costs."

Dow's cost-containment approach involves planning for different business and economic scenarios (see "When Cutting IT Costs, Look to The Future," Page 24). Murrell notes that Dow's revenues have more than doubled in the last decade, while its IT costs have only risen 15 percent to 20 percent in that time. IT costs are a little more than 1 percent of revenue.

Despite organic revenue growth, acquisitions and expansion, Dow has controlled IT costs by maintaining an "appropriate" level of IT standardization. Murrell says that means the number of solutions is equal to the number of problems. "You're not doing things twice that need to be done once."

Dow has done well enforcing its IT standards. Consider this: The company, which sells 3,100 products, runs on a single global instance of SAP. More than 90 percent of its 46,000 workers worldwide use laptops of the same brand, Lenovo. "There's no variability where there doesn't need to be," says Murrell. That keeps costs down.

The emphasis on standards means IT customizes solutions only when necessary. Murrell says the goal is to deliver a high level of service at a low cost. However, "Driving our IT cost to zero is not where we should go," he says. For now, Dow seems to have struck the right balance.

—Meridith Levinson



Philadelphia Wi-Fi Network Saved

WIRELESS Philadelphia's municipal Wi-Fi network, previously scheduled to be shut down by its builder, EarthLink, has been saved by a group of private investors.

The investors will finish building the network and plan to work with nonprofit organizations to offer services to people without Internet access. They plan to contract with several enterprise and municipal customers as anchor users of a paid service and offer free services to the general public.

The group modeled its idea on other successful municipal Wi-Fi ventures, says Craig Settles, an independent consultant who has been in close contact with people involved with the new arrangement. In Fredericton, New Brunswick, Canada, for example, the network provider partnered with 12 businesses to commission the network. The business users pay for access, while citizens can use the network for free.

"Despite all that has gone on with Philly and their network, I still expect the city to join the ranks of successful muni network projects," says Settles.

The investor group will use advertising to help support the free service. In addition, the group also expects to offer wired service to its customers. Mark Rupp, Rick Rasansky and Derek Pew are three founders of the investor group. Pew and Rupp are on the board of Remi Communications, a provider of communications services to enterprises.

Philadelphia's network was one of the first (read "More Cities and Towns Want Their Own Wi-Fi" at www.cio.com/article/19686). But the plan drew fire from Verizon, which charged it was unfair to use tax dollars to build a network that would compete with private providers. Eventually, EarthLink won a contract to build a network at no cost to taxpayers. But the Internet service ran into financial difficulties and scaled back its Wi-Fi projects. In May, after failing to come to an agreement with city and nonprofit groups, EarthLink said it would shut down the Philadelphia network that it had already built.

—Nancy Gohring



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BY MARGARET LOCHER

Online Fraud Tools Lagging

Technologies for fighting threats face maturity and adoption barriers

Online fraud is getting worse. In 2007, Americans reported losses of \$240 million due to the problem, according to the Internet Crime Compliant Center. That's up \$40 million from 2006.

Yet defenses against online fraud—including adoption of new technologies—are not keeping up with scammers' tactics, says Forrester Research Senior Analyst Geoffrey Turner. He puts fraud defenses into four categories: authentication, monitoring, risk-driven controls and fraud intelligence. "A robust defense includes all four methods," he says. However, his report, "Countering Online Fraud Globally," notes capabilities in those areas are still maturing and will keep losses only at current levels.

Turner says it's important to include fraud countermeasures in your big-picture security plan for IT. CIOs sometimes make the mistake of treating counterfraud and IT security as two separate domains, he says.

To combat cybercriminals, CIOs need to assess practices of establishing and verifying identity, since most Internet fraud stems from some aspect of ID theft. They should also look at how stronger identity-proofing credentials can be applied to current business processes. "New identity technologies and processes that are better suited to today's online environment are available," he says, "but their adoption is lagging far behind the fraud economy's ability to exploit outdated identity practices."

Online fraud will be significantly reduced only by broader adoption of more effective identity technology and processes. "CIOs should simultaneously be looking at how identity and fraud relate to the issues in the markets in which they operate and begin to consider market-scale, multi-organizational strategic changes," says Turner.

Best Practices

- 1 Examine** how much risk your organization faces. Should you have measures in place to prevent fraud rather than an action plan to recover from it?
- 2 Look** at how you use the information that is generated from fraud-monitoring systems. Turn that data into security controls so that you're getting the most out of your monitoring system.
- 3 Evaluate** online transaction-monitoring activity and authentication practices. Analyze whether broader monitoring or additional authentication factors are necessary.

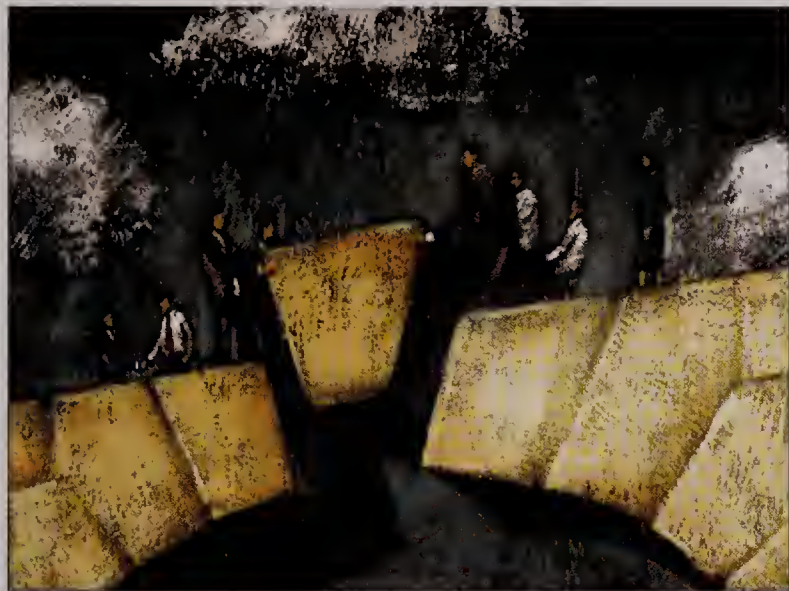
TRENDLINES

Black-Market Pricing for Identity Data

Top-ranked types of data that thieves want to get their hands on:

WHAT THEY WANT	Bank Accounts	Credit Cards	Full Identities
HOW MUCH THEY'LL PAY FOR IT	\$10-\$1,000	40¢-\$20	\$1-\$15

SOURCE: Symantec



A Dollars and Sense Approach to Business Continuity

Today, few business and IT initiatives match the challenge of protecting enterprise data and ensuring business continuity. Risks are everywhere, taking the form of both natural and human-caused disruptions, while strategies and solutions are often intricate and expensive. Many organizations find themselves struggling to meet aggressive metrics and targets. And as economic factors—including tight budgets and an economic downturn—make their presence felt, the situation is likely to become more difficult for already strapped IT executives.

It's no small challenge. Business continuity isn't a set and forget proposition. It's a dynamic and constantly evolving environment that requires close technical scrutiny, but also a healthy dose of business acumen and an understanding of how to design an infrastructure that's both effective and flexible. For many organizations that find budgets and spending levels moving sideways or creeping downward, there's enormous pressure to maintain an environment that delivers a solid return on investment (ROI) as well as the lowest possible total cost of ownership (TCO).

As recovery time objectives (RTO) shrink and recovery point objectives (RPO) diminish, it's essential for business and IT decision makers to extract the most from their resources and build a better disaster recovery and business continuity model. For some, this may result in a more comprehensive approach to managing solutions. For others, turning to a managed services provider may make sense...and maximize dollars.

The common denominator is that things aren't going to get any easier anytime soon. Business continuity is in the spotlight and under the microscope. As a senior operations manager at a diversified manufacturing firm explains: "The biggest constraint is demonstrating a business value for an investment in systems to protect against an event that may or may not ever happen."

Navigating an Economic Downturn

Few executives would argue that business continuity is anything less than a mission critical activity. More than 70 percent of respondents to a 2008 IDG Research Services survey of 100 companies reported they experienced a serious network outage—due to natural or human causes—over the last year.

One of the biggest issues for most companies is juggling the budgets and expenses of numerous lines of business: research and development, manufacturing, marketing, operations, real estate, equipment, and many others. Too often, disaster recovery and business continuity wind up near the bottom of the ecosystem—simply because they are less tangible and less definable than most other elements of the business.

Not surprisingly, anything less than a fully committed approach to business continuity can lead to problems and breakdowns. For most organizations, tighter RTO objectives produce far greater performance pressures. It's no longer feasible to ship tapes back and forth after a disaster, or shuttle people around in order to get an organization back up and running. Today, the recovery process must take place quickly and seamlessly, while reducing the number of bottlenecks and touch points.

IDG Research Services found that IT executives feel pressure to adjust practices and adopt new approaches and strategies. Nearly half (47 percent) say they believe that the current state of the economy has a negative impact on spending, while 22 percent believe it undermines staffing, and 20 percent say it threatens the

organization's ability to maintain equipment and facilities.

The current economic downturn is also taking a toll on actual business and IT practices. Nearly half of all respondents (47 percent) say that they are now focused on optimizing current IT infrastructure and resources; 42 percent say they are limiting new hires to vital positions; 35 percent are trimming spending on facilities, equipment and other major assets; 29 percent are delaying IT purchases; and 24 percent are postponing new IT projects.

In other words, CIOs and other IT executives recognize that they must squeeze more out of less. They must maximize the use of existing financial resources but also focus on innovation. Eighty-one percent are considering technology or services that will enhance their current disaster recovery or business continuity solution. In many cases, they are compelled to tap into more advanced storage and networking technologies, virtualization methods, green solutions, and managed services.

These technologies are fundamentally changing the business continuity outlook. And, for organizations that use them wisely, they are transforming the entire data protection model. They are making it possible to achieve performance and cost efficiencies that weren't imaginable only a few years ago.

Virtualization is a perfect example. It allows companies to manage data across multiple servers or storage devices. As a result, an organization can balance resources and computing loads far more effectively. This, in turn, boosts speed, reliability, and availability.

Another tool, electronic vaulting, helps an organization keep track of multiple versions of the same file or document—and store all the data securely within a storage system. The backup process occurs automatically and transparently, which also makes it appeal-

ing to smaller firms and organizations that possess limited IT resources. Yet electronic vaulting can create its own set of challenges and obstacles, including a need for additional bandwidth.

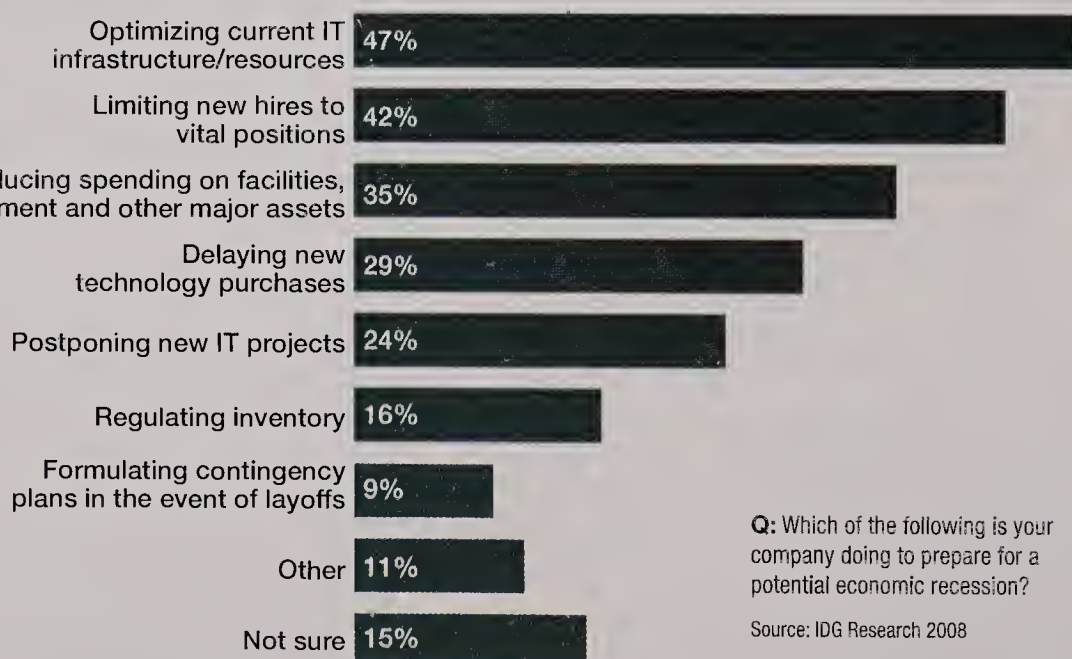
Virtualization and electronic vaulting are only a start, however. The IDG research found that organizations are now taking a close look at a number of business continuity tools and technologies. Just under half (47 percent) are considering storage replication, and 42 percent are eyeing failover capabilities. Approximately one-fifth (18 percent) are weighing the use of electronic replication, and one in five are considering outsourcing business continuity to a third-party provider.

Storage replication—also referred to as file replication and data replication—is growing in interest because it provides a managed service that duplicates stored or archived data in real time across a storage area network (SAN). This extra layer of redundancy can prove invaluable if a primary backup system fails for any period of time.

Failover capabilities have moved into the spotlight as well. Today's e-enterprise requires a secondary system or network that takes over when a primary system goes down due to component failure, disruption, disaster, or any other reason. In fact, fault-tolerant servers and storage devices are now key components in building a business continuity model focused on 24/7 data availability.

Not surprisingly, this quiltwork of systems can prove complex—and organizations must choose from a tangle of technologies, including virtual tape systems, networked attached storage (NAS), Internet Small Computer System Interface (iSCSI), SANs, and continuous data protection (CDP). They may also need to conserve space and energy costs. Green initiatives have moved beyond good corporate citizenship and into the realm of essential tools.

Optimizing resources and limiting new hires are the top two strategies in place to prepare for a potential economic recession



Q: Which of the following is your company doing to prepare for a potential economic recession?

Source: IDG Research 2008

Perhaps more than anything else there's a need to put everything into perspective and understand what technology or solution is best for a particular situation.

"There's no simple approach," says a senior operations executive at a large manufacturing firm. As a result, his firm has turned to a spate of advanced solutions, including virtualization and SAN replication. "When we make buying decisions, we examine ROI and calculated risk and put it in context with recovery time objectives," he adds. "Depending on the data, recovery may take minutes

or days, but we know when we will have it available. And then we examine the situation and the RTOs on an annual basis.”

Finding a Path to Success

With disaster recovery and business continuity growing more complex by the day, line-of-business and IT leaders face increasingly challenging systems management decisions. Nearly two thirds of the IDG Research respondents (65 percent) indicated that they expect to deal with competing priorities, 62 percent cited a lack of necessary funding, and four in 10 say that they lack the required personnel. One-third face technology limitations and three in 10 feel that they have little or no management support.

As a CIO for one of the nation’s largest banks explains: “Our budget is extremely constrained right now. We don’t have the dollars and resources to cover all of our needs. Unfortunately, disaster recovery and business continuity don’t receive the attention they should. There’s no question that the situation leaves us somewhat vulnerable—especially for large-scale disruptions like an influenza pandemic, an earthquake, or tornado.”

This financial institution isn’t alone in recognizing that budget constraints often compromise the ability to safeguard data. In fact, a growing number of companies are looking for ways to prepare for a potential economic downturn. According to IDG Research, almost half of all organizations are working to optimize their current IT infrastructure, while 42 percent are limiting new hires to vital positions. Just over one-third (35 percent) are reducing spending on facilities, equipment and other major assets, 29 percent are postponing new technology purchases, and 24 percent are postponing IT projects.

Many executives and IT managers recognize that an organization is only as strong as its weakest link. Getting a handle on diverse tools and technologies—as well as network performance and bandwidth—can tax even the most committed enterprise. “Understanding storage tiers and establishing appropriate RTOs for different departments and units within an organization is extremely important,” relates a CIO for a leading transportation firm. “There’s a clear need to conduct a cost-benefit analysis and understand all the tradeoffs.”

This required level of involvement—along with steady or shrinking budgets—makes it more difficult for organizations to deliver on the promise of business continuity. As a result, a growing number of organizations are turning to a managed services approach, which may incorporate virtualization, electronic vaulting, failover, redundancies and other solutions. These emerging

and evolving technologies offered under the umbrella of managed services—along with an ability to re-connect to data from a different physical location following an incident—provide a less onerous and often less expensive way to plan for business continuity.

In fact, a managed services approach can help an enterprise become more strategic in its business continuity planning. An outstanding provider can work with an organization to develop an effective disaster recovery and business continuity plan and ensure that the right equipment and workflows are in place to cope with a significant disruption. This consulting expertise, along with the ability to ensure that state-of-

the-art solutions are in place, helps bring data storage, recovery services, network services, and hardware and software under a single umbrella. This approach can shift business continuity from a burden to a strategic advantage.

Yet, all managed services providers are not created equal. It’s vital to deal with a company that has the business and technical expertise to understand risks in context with an industry and a specific enterprise. It’s also essential to seek out a services provider with a robust infrastructure, including hardware, software, facilities, networking and bandwidth, and around-the-clock support. Account managers and support staff must understand an organization’s exact requirements and constantly evolving strategic objectives. And the company must invest in technology and training to stay current.

Adopting a Dollars and Sense Approach

Hardened facilities, adequate network resources, ample bandwidth, the right combination of hardware and software solutions, and knowledgeable IT staff can determine whether an organization navigates past an incident unscathed or finds itself struggling to stay afloat. Moreover, the ability to access enterprise systems and data after a disaster or outage can separate success from failure.

In the end, business continuity planning is a formidable task but one that every organization must address—particularly in an era of rapidly shrinking RTOs and RPOs. Although stagnant budgets and a tough economy make the task more onerous, organizations that keep their eye on core strategic issues, create a flexible and scalable environment, use emerging technologies and managed services effectively, and avoid complacency are poised for far greater success and maximum ROI. In difficult economic times, nothing less will suffice.

For more on business continuity, including the research report mentioned in this article, please visit the SunGard solution center at www.cio.com/solution-centers/sungard.

A managed services approach can help an enterprise become more strategic in its business continuity planning.



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BY **JUAN CARLOS PÉREZ**

Business Continuity Manager

job description: A business continuity manager (BCM) creates plans to keep a company functioning after disruptive events such as natural disasters, terrorism, crime and computer and human error. They do a detailed, companywide business impact analysis and risk assessment that includes IT systems, building facilities, personnel and supply chain, says Roberta J. Witty, a Gartner research vice president. Starting with Y2K, companies have become more aware of the need to have disaster recovery and business continuity plans, experts say.

priorities you could be spending your money on that might generate immediate returns," Gray says. So BCMs must be good communicators, think strategically and understand the company's operations.

elimination

round: Gray suggests asking, How do you achieve a balance between building a good business continuity plan and something that's unwieldy and overkill? The answer should reveal insight into the process a candidate would use to establish what's critical.

why you need

one: You need to have a business continuity manager, says Jim Lanzaletto, vice president of strategy and marketing at Yoh. "The cost of entry for any company is to have someone like this working for them, given the geopolitical and other risks," he says. Organizations that fail to conduct comprehensive business impact analyses and draft detailed business continuity plans could be in vio-

lation of regulations, especially in industries like finance. Plus, being unprepared in the event of a major disruption is simply bad for business. Companies have also had to expose their IT systems to the outside world via the Web, which creates a bigger security risk, says David Van De Voort, principal human capital consultant at Mercer.

desired skills:

Between five and 10 years in a consulting role, either internal or external, that has given a candidate a broad view of a company's processes. For example, a candidate from IT should have been involved in supporting specific units, like finance or operations, says Patrick Gray, president of Prevoyance

Group, an IT strategy consulting firm. "You must be able to look at processes from an operational perspective and figure out what's critical, what needs to be duplicated and how to lay it all out," he says. A variety of certifications apply to this job, including those from DRI International (DRII) and Business Continuity Institute (BCI).

how to find one:

Trade groups, such as DRII and BCI, are good recruitment sources, Lanzaletto says.

what to look for:

BCM's must be good salespeople since they often encounter resistance. "Business continuity is a tough sell when everything is going fine and there are other

growing your

own: This is a job that really lends itself to growing one's own candidates because there is such a variety of certifications and training available that can be coupled with a deliberate career path, Lanzaletto says. "You can really build this person internally," he says. People with strong project management skills are good candidates, as well as those who have shown they can work across teams.

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lmclaughlin@cio.com

Are we nearing
the moment
when enterprises
can make a wide-
spread switch
from PC to Mac?
Apple's still got
some work to do,
IT leaders say.



A Tangled Path for Macs in the Enterprise

BY C.G. LYNCH AND ROBERT LEMOS

DESKTOP ARCHITECTURE | When Apple CEO Steve Jobs announced that the first iPhone was ready for enterprise use, the announcement caused a stir that few of the world's iconic businessmen could match. It seemed that everyone from rank-and-file worker-bees to CEOs wanted to get their corporate applications served up on the hot new device. Why? This was Apple—a synonym for awe-inspiring design and coolness—the antithesis to stodgy old corporate technology that burns the eyes red and freezes computers blue. And when Jobs announced the second-generation iPhone in June, the frenzy was just as loud.

But some Apple watchers and evangelist IT practitioners who use Macs for business think the iPhone's favorable reception portends something more: Some believe it could usher in the era of a more enterprise-friendly Apple.

Such a paradigm shift, they argue, could serve as the final ingredient in the boiling cauldron being stirred by employees at the edge of organizations who have become dissatisfied with corporate technology and have turned to innovative options in the consumer market to meet their needs.

Some tall hurdles related to converting an enterprise from PCs to Macs, of course, have been around for years. Many corporate IT departments find themselves beholden to decisions made by predecessors during the 1990s, when PCs and the Microsoft Windows operating system seized a choke hold on the corporate market. Companies planned everything from back-end servers to client software based on a Microsoft framework, notes Roger Kay, an analyst with Endpoint Technologies. Integrating Macs into such an environment requires time and money. "Despite the hairiness of Microsoft software, most companies crave compatibility with it," Kay says.

But a move to Web-based software could alleviate the IT hang-up on integration. And from a hardware perspective, Macs have increasingly become consumers' brand of choice. Apple shipped 2.3 million Macs in the second quarter of 2008, which represented a 51 percent unit growth for the product and helped Apple realize 43 percent revenue growth, compared with the same quarter the year before. Still, businesses' adoption of Macs and Apple software has been sluggish, perhaps, in part, because this is a low priority for Apple. While Apple, of course, deals with businesses, it remains a consumer-oriented company, by the numbers.

And evangelists who run Mac shops in small and midsize businesses say their experiences, not as dissimilar to those of large enterprises as you might believe, still demonstrate a mixed bag of results for those using Apple in the corporate setting.

The Wholesale Switch

Shani Magosky, chief operating officer (with IT responsibilities) of Jaffe Associates, a 25-person marketing and public relations firm that serves the legal industry, didn't need the iPhone to embrace Apple.

Magosky started looking into Macs for her traditionally PC- and Windows-

based company last fall because she was sick of her PCs and terminal server breaking all the time. "There is just so much that can go wrong with them," she says. "All these viruses happen to PCs that don't happen to Macs. And then it costs you more to fix it than just buying a new one. So I said I wasn't going

that have been managing mixed Mac and PC environments for years say that Apple still has some work to do.

Rob Israel, manager of desktop support at Re:Sources, whose client is Digitas, a New York-based ad agency, says that 25 percent of his company runs Macs. Israel, who helps manage some

As applications increasingly move onto intranets and the Web, Macs could cost-effectively be adopted by smaller clinics and health facilities.

—Will Weider, CIO, Ministry Health Care and Affinity Health System

to waste anymore, and went out and bought a MacBook Pro."

Then there was the "sticker shock" of learning that it would cost \$100,000 to replace the outdated, unreliable version of Microsoft's terminal server she'd been running with Microsoft SharePoint.

Perhaps serendipitously, right around this time, her boss, President and CEO Jay Jaffe was wowed by a visit to Apple's flagship store in San Francisco. Before long, Magosky set about switching her entire shop over to Macs and Apple-friendly software, including Office 2008 for Macs, Entourage for e-mail and Apple's Xserve server for back-end storage of data.

Magosky predicts that Jaffe will realize a savings of 50 percent in maintenance costs due to the Apple switch, which will pay for the hardware and implementation of Apple products in the first year, she says.

While she pays the same hourly rate for Mac support now as she did for Windows, she realized this savings by cutting the amount of hours substantially.

Hurdles Remain

Ditching PCs at a 25-person company is one thing. But introducing Apple to a large enterprise with legacy systems is quite another. Even some enterprises

700 Macs across the enterprise, says that a hybrid environment of Macs and Windows can have its pitfalls, technologically and culturally.

"We barely deploy Apple servers here even though the culture has become Macintosh-friendly," he says. "There is still a sense in the IT department that we are a Windows shop, and why bother complicating things by introducing more platforms?"

The IT shop runs six Apple Xserves, one of which hosts Filemaker Pro.

While Israel describes the company's relationship with Apple in terms of account management as "great," the arrangement leaves some things to be desired, he says. "Apple does not provide technology road maps, which enterprise IT departments obviously need," he says. "What's worse, they make their hardware incompatible with the previous version of the operating system, and their schedule is impossible to keep up with."

For instance, Israel says Digitas has trouble deploying new versions of Leopard, Mac's operating system, as quickly as Apple demands. Every time Apple moves to the next version of an OS, Israel says, Digitas ends up having six months when it's forced to buy out-of-date equipment to stay compatible with

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the old OS. "We have complained about this for the last four years," he explains. "They [Apple] do not have any motivation to design their new hardware to support an old OS, so they won't."

Tipping Point? Not Quite

Apple's buzz could hardly be louder. But have we now reached a time when many large enterprises can consider doing a rip and replace, swapping PCs for Macs? Not likely, says Kay.

Even if a progressive CIO who felt his or her company had sunk too much money into Windows wanted to switch

only about 20 would have a version that runs natively on Mac OS X.

He also serves more than 16,000 users with systems less than four years old. Moving that many people over to Mac hardware would cost at least 20 percent more, he estimates, making it unlikely that the companies will switch from Windows anytime soon.

"Even for me to suggest (switching) to management would be career suicide," Weider says. "And we are really heavy into standardization, so I wouldn't even consider a mixed-mode environment."

Weider sees possible opportunity in

"Apple does not provide technology road maps, which enterprise IT departments obviously need."

—Rob Israel, Manager of Desktop Support, Digitas

wholesale, gaining the initial capital to get the job done, especially as the economy tightens, could be difficult, Kay says.

Will Weider, CIO of Ministry Health Care and Affinity Health System, is one of those IT leaders who has fantasized about switching his enterprise from PC to Mac—but says he can't yet.

Weider, a longtime Apple fan, has used Macs since he paid \$3,000 for a Mac Plus in 1986 and shelled out another \$600 for 512KB of extra memory. Although he took a break from Macs during much of the '90s, Weider likens Macs to luxury cars in a PC world of Chevy Impalas.

Yet it's the world of the Impalas where he has to work daily. At work, of the 400 applications necessary for the two businesses to operate, Weider estimates that

the future, however. As applications increasingly move onto intranets and the Web, Macs could cost-effectively be adopted by smaller clinics and health facilities, he says.

Weider believes a widespread move to Macs could give his company benefits, including greater negotiation power with vendors, lower malware risks and better-educated end users.

Many of his workers use Macs at home, so Weider was able to convince other executives that the healthcare companies needed to support those Macs and allow remote access to specific applications through Citrix.

But for now a widespread move to Macs is a wish, not a plan.

"You are certainly looking at a greater opportunity," he says. "But right now, all of the planets in the solar system would have to line up right to make that [moving to Macs] make sense." **CIO**

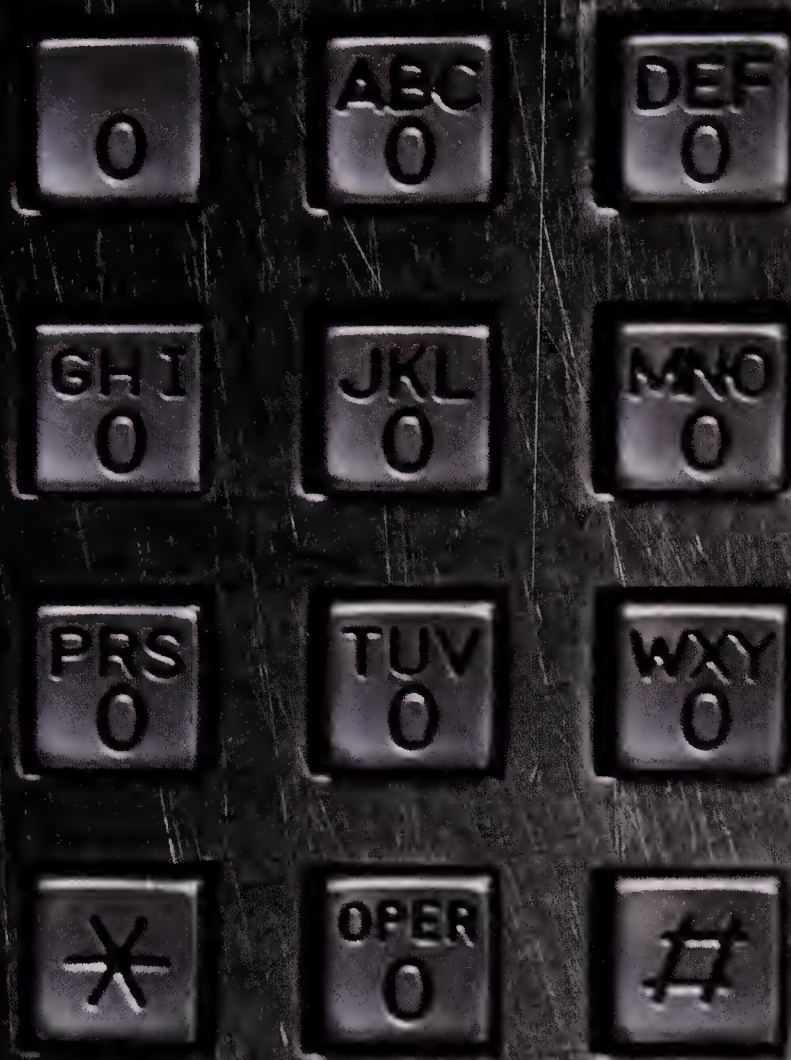
Five Reasons to Ditch the Mac

For some tech chiefs, the Apple magic wears off. Here's why one IT leader recently came back to the Windows world, after spending years on the Mac side. See **Five Reasons to Ditch the Mac** at www.cio.com/article/326169.

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Robert Lemos is a freelance writer. C.G. Lynch is a staff writer for CIO. To comment on this article go to www.cio.com/article/328917.

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When Cutting IT Costs, Look to the Future

Forget those old slash-and-burn tactics. Instead, CIOs should identify what resources the IT organization needs to help the business reach its goals.

T

he economic slump has generated pain all around. If it hasn't kicked in for your organization, at some point it will. As we swing into the second half of the year, CIOs are scanning for opportunities to prune expenses. For those who anticipate being asked to cut their IT budgets between now and the end of the year, it's a good time to reflect on our past behavior.

The last time the economy soured, CIOs responded as if the sky were falling. In the ensuing panic, many CIOs cut too much of the wrong things. This time, you need to plan ahead to preserve your organization's ability to grow again when needed (See "How Dow Chemical Keeps Its IT Costs Low," Page 14).

Then: Destruction of IT Competency

Think back to the dotcom boom. Remember the Y2K spending hangovers and bloated organizations? IT shops amassed unused software and stacks of unread service and maintenance contracts. Pioneering infrastructure outsourcing deals designed to "save money" were launched with nary a baseline cost analysis. Travel was unconstrained, and everyone's stock was up.

When the bubble burst, IT organizations were sitting ducks. Spending was justifiably slashed, but without contingencies and little strategic thought about what would happen once growth began again. Vendors went out of business, venture capitalists stopped funding new ideas and IT R&D teams were disbanded, putting a damper on innovation. Meanwhile, service levels often plunged and enterprise know-how was pushed out the door without warning, as just-do-it outsourcing accelerated.

Finally, as a nasty side effect, IT lost its charm as a career for young people—just as the average age in many organizations began to climb. In one large defense industry IT organization I am familiar with, the average age of IT employees is older than 50. In a large manufacturing company, only the senior IT staffers are employees; instead, IT careers with the



Audit & Enterprise Risk Services

Business continuity management

“aware” vs. “committed”—where do you stand?”

Initial findings from the Deloitte¹ Global Business Continuity Management (BCM) benchmark

A newly hired middle manager finally had the opportunity to meet the CEO of his company. He introduced himself by his title – which happened to be business continuity manager. “No, young man,” replied the CEO, “I am the business continuity manager around here.”

Although apocryphal, this anecdote illustrates a key fact: senior managers, if they are wise, anticipate that there will inevitably be incidents that will interrupt their businesses – and that they, as organizational leaders, must take responsibility for keeping the business going despite such incidents.

In fact, business disruptions can no longer be considered exceptions. They are now commonplace, largely due to the increasingly global nature of business. Companies that once acted only in local marketplaces have become regional, national, and often international players. The storms, the terrorist attacks, the accidents, and the political or economic turmoil that would have been considered wildly unpredictable a generation ago happens somewhere in the world every day. Interdependencies have increased. Even if a company's operations are not directly impacted, these disruptions affect their suppliers and *their* customers. Senior managers need to be alert to the possibility – no, the probability – that some untoward event will prevent business from continuing as usual for their companies. They must be prepared to take appropriate action.

The Deloitte Global Business Continuity Management (BCM) Benchmark provides interesting insight into

the relationship between senior management behavior and the ability of businesses to recover from disruptions. This report is the first in a planned series of research reports based on the Deloitte BCM Benchmark². This online ‘dynamic survey’, with participants in virtually every region of the world and across multiple industries, allows us to report on the key themes that emerge in the data over time, and to discuss relevant trends and insights.

In this first summary of the benchmark results, we see that commitment to business continuity is still evolving, although there is broad awareness of the need for effective BCM strategies. Fifty-five percent of respondents (who were mostly business continuity managers) reported a relatively low level of senior management involvement in their organizations’ BCM efforts. These individuals said that although their top executives were aware of the need to plan for business disruptions, they did not support that awareness with adequate resources. In contrast, a smaller group (45 percent of respondents), indicated that their senior managers were either routinely informed or actively involved in planning for recovery from information technology or business process interruptions, and were committed to effective BCM in their organizations. These two groups could be termed, respectively, the “Aware” and the “Committed.” The *Aware* group of managers knows that there is a problem; the *Committed* group is taking action to resolve it.

Tolerance for downtime

There is a clear correlation between the level of senior management involvement in BCM and an organization's tolerance – or lack of tolerance – for downtime. Of those respondents who said their organizations need to recover critical processes in two hours or less, 61 percent also reported that senior management was *Committed* – that is, either actively involved in setting and driving disaster recovery and business continuity priorities, or being briefed on BCM activities on at least a quarterly basis.

In contrast, of those who stated that senior management was merely *Aware*, only 39 percent said they need to recover key processes in less than two hours.

Figure 1. Percentage of companies with a tolerance for downtime of no more than two hours



¹ In this instance Deloitte refers to Deloitte Touche Tomatsu member firms

² Data for this report was pulled from the benchmark database in May 2008.

Figure 2. Facility recovery plans

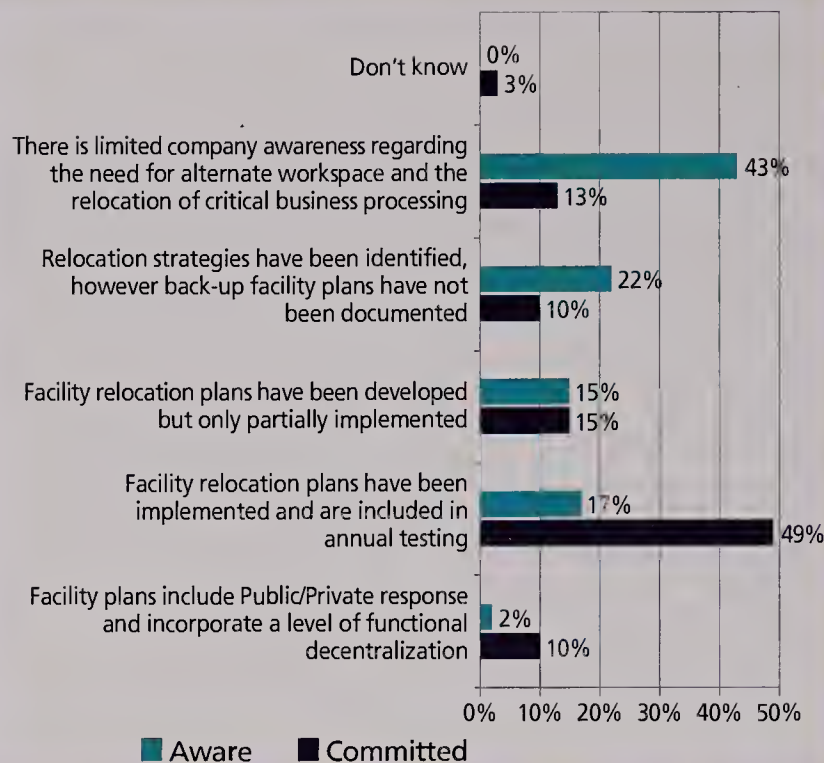
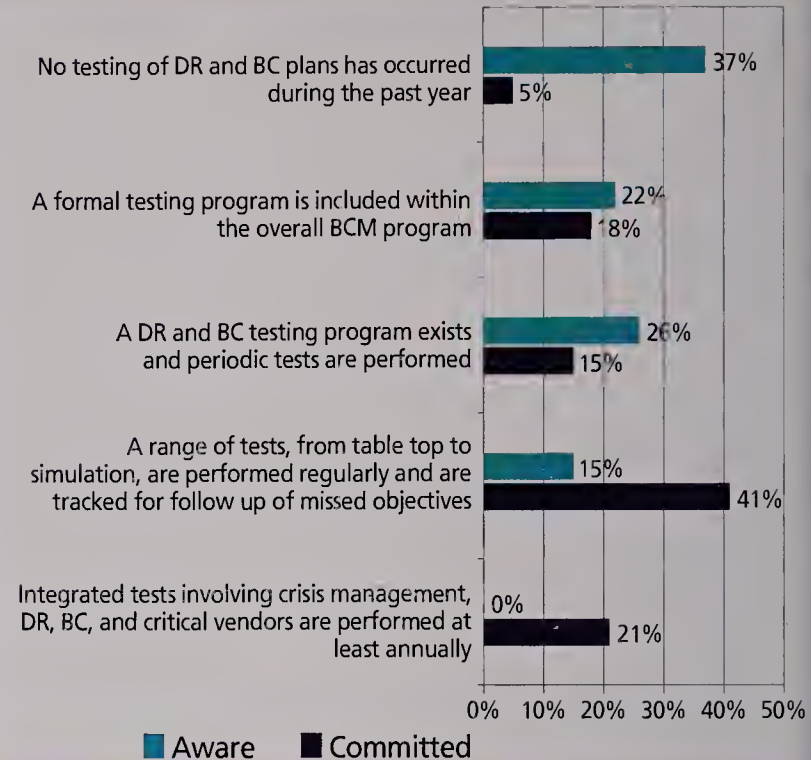


Figure 3. Business continuity and disaster recovery testing



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Recoverability of key facilities

According to the Deloitte Benchmark, the biggest difference between organizations with *Committed* versus *Aware* senior managers involves the investment and state of their respective backup facilities. The group with *Aware* senior management indicated, at best, that their companies had developed some relocation strategies but that the plans for their backup facilities had not been documented. Nearly a third of these respondents said that there was limited awareness of the potential need to secure an alternate workspace.

However, the majority of the companies with *Committed* management indicated that they had facility relocation plans in place and that they tested them at least annually. Some have gone further, implementing programs for coordinating public and private responses to incidents that use functional decentralization as a

means of limiting the impact of damage to particular facilities. By contrast, less than 20 percent of the companies with *Aware* management had developed such advanced relocation plans.

Testing recovery plans

A key indicator of how well a company has prepared for IT and business process disruptions is the degree to which it has tested its recovery plans. The disparity between *Aware* and *Committed* senior executives is quite pronounced on this point. More than a third of those who responded that their senior management was simply *Aware* also reported that they performed no testing at all in the past year. In contrast, just a handful (5%) of those with *Committed* management said the same thing. Alternatively, nearly 60 percent of those with *Committed* senior management stated that they regularly perform a range of tests, and that they fix any problems identified by the tests.

The majority of those integrate their recovery and crisis management tests including tests of business and IT recovery as well as interaction with critical vendors.

Does size count?

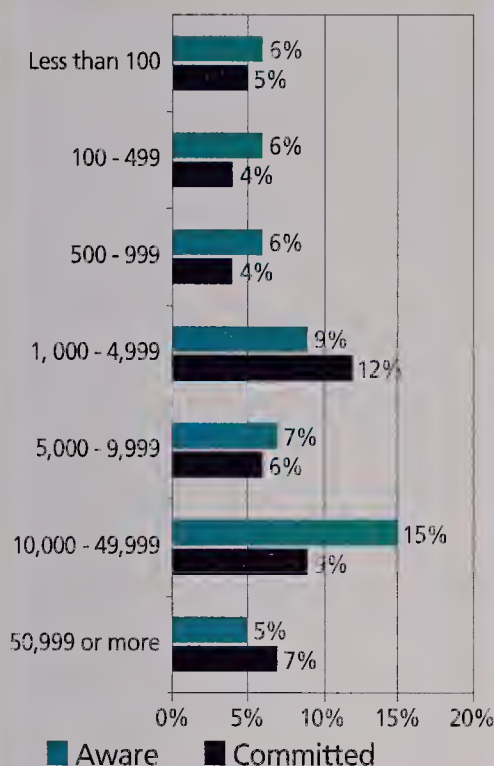
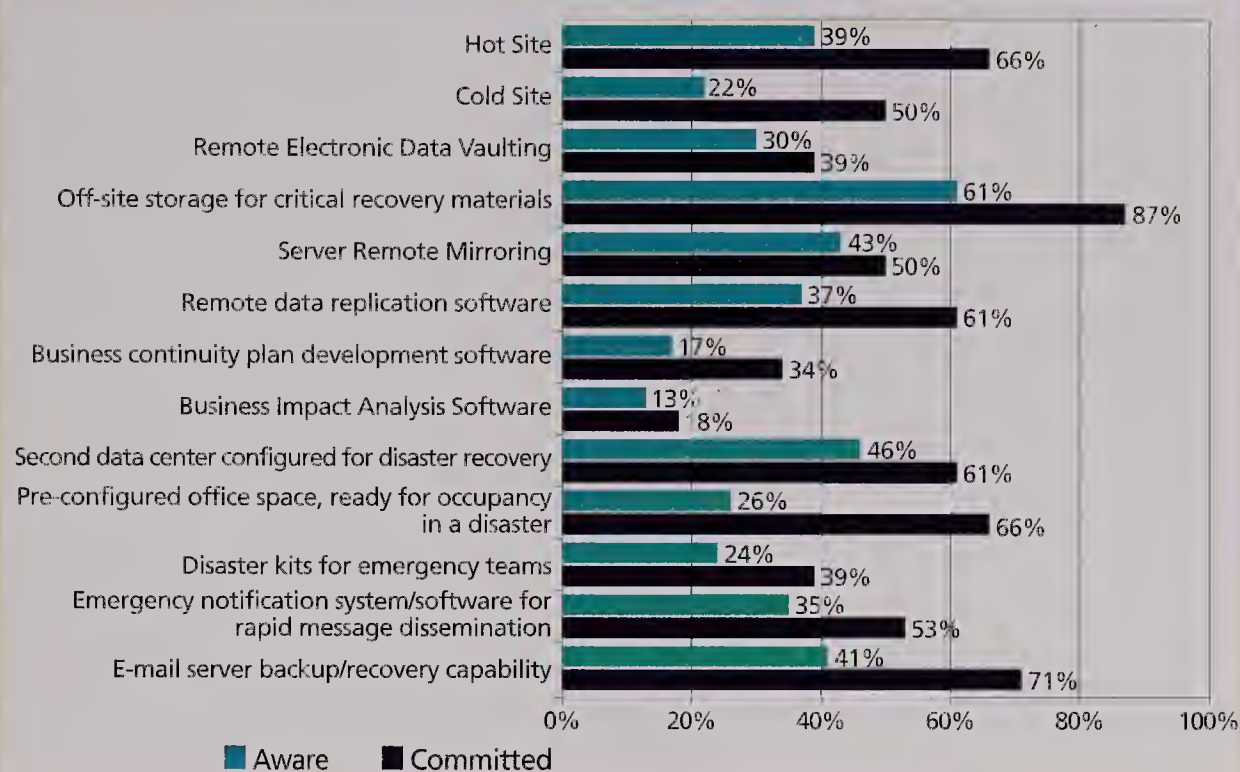
It may be thought that BCM is a luxury that only mega-corporations or companies in highly regulated industries can afford. The Deloitte BCM Benchmark results do not support that supposition. True, senior management was rated *Committed* by 60 percent of respondents from the largest organizations surveyed (those with 50,000 or more employees). Still, that leaves 40 percent of such companies having senior managers who were merely *Aware*.

In somewhat smaller (but still large) companies with 10,000 to 50,000 employees, *Aware* management outnumbered *Committed* management by a substantial margin: 62 percent to 38 percent. The variability in the correlation of management involvement with company size continued throughout the response population. It seems likely that whether senior management is actively involved in BCM or not is due to factors other than the size of the organization they run.

Making the right choices for resilience

Perhaps the most concrete evidence of how organizations' senior managers think about BCM is the way in which they spend their organizations' money. The Deloitte BCM Benchmark asked respondents which BCM products and services they had purchased for their organizations. These could include commercial recovery sites, systems for backing up data, software to assist in writing and maintaining plans, and disaster supplies for recovery teams. Interestingly, although *Aware* and *Committed* senior managers chose or didn't choose specific product and service categories in roughly the same ratio, the *Committed* out-purchased the *Aware* in every category. This is even more notable because *Aware* senior managers outnumber *Committed* managers, 55 percent to 45 percent in the Benchmark as a whole. It would seem that *Committed* senior executives and managers are making more, and broader, investments in recoverability than their *Aware* counterparts.

“...a clear correlation between the level of senior management involvement in BCM and a company's tolerance — or lack of tolerance — for downtime.”

Figure 4. Awareness is NOT a function of organizational size**Figure 5.** Program enablers in place

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The Deloitte business continuity management benchmark

If your board of directors, senior management team, or even someone from outside your organization were to ask you to demonstrate your organization's ability to recover from a disastrous event, how would you respond? Do you have any credible evidence of the effectiveness of your business continuity plan and recovery capabilities?

Very few organizations do. Although many companies are putting business continuity planning programs in place, few have attempted to measure whether they actually work. One way to do this, and to prepare for ever-more intense scrutiny from regulators, investors, auditors, and customers, is to

compare key metrics of your program to those of other companies, especially your peers.

Get committed: be in the know An open invitation to participate in the global benchmark program

As a leading provider of BCM services to businesses and government agencies around the world, Deloitte invites BCM professionals to participate in its innovative new BCM Benchmark program. By completing an online survey, participants get access to benchmark data that compares business continuity program maturity levels by industry and geographic location.

Participation is easy; the results are impressive. The only requirement is to respond to a list of online survey questions with your company's BCM program data. It takes only minutes to complete, and the benefits are substantial—your report is available within days, and you can share the information with your executive management team.

To be part of Deloitte's free Business BCM Benchmark, visit our website at <https://www.dexsurvey.deloitte.com/anondirect.asp?XID=15267>. As a service to the BCM community, Deloitte offers BCM benchmark participation at no cost.

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Risk comes in many forms.

Making risk intelligent decisions to manage security

Information security, privacy & data protection are management issues with global business implications. The associated risks of doing business today need to be clearly understood in order to effectively manage your business and protect your organization.

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company must be launched and developed inside supplier organizations.

Now: Preserve the Future of IT

In this next wave of cutbacks, we can do better. We now know which cuts—like eliminating investment in R&D—weakened IT's ability to respond when business picked up and CIOs were expected to contribute to innovation.

Let's assume your organization is doing all the right stuff: consolidating servers, data centers, vendor licenses and maintenance agreements; deferring new purchases and outsourcing commodity services under contracts that really do save money. Let's also assume that you've offered early-retirement incentives for eligible employees, terminated any contractor roles you can live without and deferred filling vacant staff openings. You're doing all the right tactical things, so what shouldn't you cut and where else should you look?

1. Protect hard-to-fill roles. Architects, database administrators, relationship managers, security specialists and business analysts: It took time to find them—and even longer for them to understand your tech environment, business constituents and enterprise strategies. How much time has it taken them to identify investments your company needs but that no business leader has thought to request? These folks know what's needed next year and beyond, though their value isn't always obvious to the CFO.

Make the case for keeping them by clarifying what will happen if you don't retain their skills in-house. Without that archi-

tect, future M&A synergies may take forever to crystallize. Without a really senior person acting as a demand manager and helping business

units prioritize projects, those business units may get from IT just what they asked for, but not what they need. If the IT budget is a top target for cuts, try shifting business analysts and demand managers to more flexible business budgets.

2. Bring on the interns. Interns are inexpensive. And young people represent the future of your business, your IT organization and the IT industry. Even if they don't join your company full-time, interns who work for you will end up referring new employees, customers and vendors.

To tap into the supply of interns, cultivate a relationship with business and technical faculty at your local college. Each semester, bring one of their top students on board to learn your business, soliciting their observations and ideas. You may find talent you can't do without. Keep in touch with your interns, and when they graduate, help them find jobs

The last time the economy soured, CIOs cut too much of the wrong things. This time, plan ahead to preserve your organization's ability to grow again when needed.

in your firm or with a peer at another company.

Meanwhile, take advantage of this year's crop of graduates. As the economy softens, they're finding it tough to line up jobs. Hire a few of the brightest before they give up and enroll in business school. It's better for them to gain a few years of work experience from your organization as context for an MBA—and better for you to cultivate a future with them so they return after they get that graduate degree.

3. Solicit ideas from your staff and peers. Your staff knows what's really going on in the nether reaches of the firm: which organizations struggle under laborious processes, which business units are hugging their tiny data centers to their chests or how teleconferences could replace costly (and often miserable) travel. Collect the ideas using an online tool, such as a wiki or discussion forum, so you can save, share and respond to their ideas.

Tap ideas from business constituents, too. They know what they truly need now and what can be put off until next quarter or next year. Ask their advice on how you can help them sustain the company while saving money. Once these conversations begin, you and your staff can suggest ways to save space, energy, time, maintenance, devices and even paper. While you're with them, take the opportunity to answer their questions about IT spending.

Why You'll Succeed

You're probably wondering whether this approach can work if IT is such a compelling cost-reduction target. I think it can because this time around, CIOs are better communicators. They've had to recover from the last round of cutbacks.

CIOs today know how to make a business case and how to explain IT's impact on profit and revenue. Today's IT executive is also experienced at explaining the value of strategic IT positions as well as the need for low-cost, high-potential new hires. He or she is well positioned and skilled enough to listen to staff and business peers. CIOs who lived through the last poorly managed slashing and burning of IT are wiser about shaping the future that their organization needs. **CIO**

Laurie M. Orlov does research and consulting on business and technology strategy. She is a former vice president and principal analyst at Forrester Research. To comment on this article go to www.cio.com/article/389463.



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Is Supply Chain Leadership A Good Move for CIOs?

CIOs can make compelling candidates for chief supply chain officer. And as the role becomes more strategic, it's a move they may want to consider.

I ask every CIO I talk to the same question: Do you want your next job to be another CIO role or do you want to move out of IT? Roughly 40 percent, I find, want out. While many in this group yearn to start their own company or move directly into a CEO role, the majority see future happiness as a COO. They know that the role bears some similarity to their current job but has a broader scope of influence and presents a meaty new set of challenges.

There are a number of career paths from CIO to COO. One of the most promising involves managing the supply chain. "The move from IT to supply chain leadership is beginning to happen on a broader spectrum," says Mike Hugos, former CIO of Network Services Company and author of *Essentials of Supply Chain Management*. "Traditional IT, as we've known it for the last few decades, is being outsourced and CIOs are being downgraded to reporting to COOs and CFOs. With technology as a leading concern for supply chain leaders, CIOs

are poised to step into the role and report directly to the CEO. The move gets the CIO a highly visible role and a seat at the boardroom table."

With their experience automating the supply chain, managing a slew of ven-

dors and negotiating a complex set of contracts, CIOs can make compelling candidates for chief supply chain officer. Four CIOs who have made the move share their experiences and offer advice for those interested in making the transition.

George Chappelle, Chief Supply Chain Officer, *Sara Lee*

In 2005, George Chappelle left his role as CIO of H.J. Heinz to join Sara Lee as its new CIO. Nearly three years later, he became chief supply chain officer of Sara Lee's North American operations. "I had some previous experience in supply chain before coming to Sara Lee as CIO," he says. "As we implemented SAP, we touched parts of supply chain, like inventory control, so I had gotten to know the supply chain through that project, as well."

Join the Conversation

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Chappelle's Advice

All operations, all the time. "Ninety-five percent of what I do now is operations," says Chappelle. "Outside of an annual operating and long-range plan, we're plotting the future in days and weeks and following an awful lot of numbers." While transaction processing and the data center have exposed CIOs to their share of operations, "the supply chain role is completely different; success is no longer measured in 12- to 18-month intervals," he says.

Expect a smaller geographical footprint. While most large-company CIOs run a global organization, many chief supply chain officers do not. "Food companies do not lend themselves to a corporate chief supply chain officer because food is sold by regions," says Chappelle. "As CIO you have the opportunity to interact with every geography; now my focus is North America."

Keith Kaczanowski, VP of Supply Chain Management, Brady Corp.

In 2005, Keith Kaczanowski was CIO of Brady Corp. when the company needed someone to spec out a plan to source products from Asia. Kaczanowski was ready for a change, so he took on the role of VP of supply chain management; he now runs global sourcing for a group of newly acquired businesses.

Kaczanowski's Advice

You're one step closer to the action. "IT is an enabler to the rest of the business; it impacts results but at a step removed from the P&L," says Kaczanowski. "In my supply chain role, I am measured on specific cost-reduction targets, working-capital improvements, inventory improvements and new-product introductions. I like having accountability for targeted operating results and being closer to the action."

You're one step farther from the action. While supply chain leaders may be closer to the company's P&L, in some ways, they are farther away from what takes place in the enterprise. "I find that I know more about the part of the business I'm in but less about the parts that I'm not," says Kaczanowski. "When I was in IT, I enjoyed knowing a lot about the entire company."

Mason Rotelli, VP of Supply Chain Management, Communications Supply Corp.

When Wesco International acquired Communications Supply Corp. in 2006, Mason Rotelli, who had been CIO for eight years, added supply chain to his role. Two years later, as the parent company was absorbing portions of IT, Rotelli moved out of the CIO role completely and became VP of supply chain management. "I was excited about the opportunity to be more deeply involved in the company's P&L," he says. "Considering our cost of goods sold is 80 percent of what we sell, supervising our spend is pretty important."

With technology as a leading concern for supply chain leaders, CIOs are poised to step into the role and report directly to the CEO.

Rotelli's Advice

All vendors, all the time. "I spend most of my time developing relationships with hundreds of suppliers, learning to position them in the marketplace, understanding their ability to be successful, establishing performance-based contracts and negotiating terms," says Rotelli. "CIOs who do not enjoy their time with suppliers will probably not enjoy this job."

Think more execution, less design. While as CIO "execution" has to be your middle name, you still spend plenty of time on strategy and design. "I now manage purchasing and inventory management people, who are more execution-focused," says Rotelli. "If you love the creative side of IT, you may miss that in supply chain."

Allen Dickason, former SVP of Supply Chain, Brach's Confections

In 1991, Allen Dickason, then IT director at Frito Lay, took advantage of PepsiCo's leadership program and accepted an assignment as VP of distribution for Frito Lay. After returning to the IT organization, and after CIO roles at Dean Foods and Kinko's, he became SVP of supply chain for Brach's Confections in 2004.

Dickason's Advice

Your CIO background is an advantage. While CIOs will have a steeper learning curve when it comes to the weights and measures of raw materials, they will also have an advantage. "As a supply chain leader with a CIO background, you have a broader and more complete understanding of how your business and its systems work," says Dickason, who left Brach's in 2008 to do IT and supply chain strategy consulting. "When my suppliers struggle with their own technology issues, my systems background is a help to them. It allows for a better partner relationship and a smoother-running supply chain."

Earn executive committee credibility. CIOs who deliver quality IT services will certainly earn the respect of the executive committee. But move into a supply chain role and "the general managers and presidents see a different side of you," says Dickason. "The fact that you are multifunctional increases your value to the organization dramatically and matures you as an executive." **CIO**

Martha Heller is managing director of the IT Leadership Practice at the ZRG, an executive recruiting firm in Boston. Reach her at mheller@zrgroup.com.



MILLION DOLLAR CIOs

Forty-seven CIOs rank among
the highest-paid execs at
Fortune 1000 companies.
How do they earn it?

BY KIM S. NASH

We in technology have gotten pretty good at assessing the financial value of projects, but not so much at figuring out what a CIO is worth. Or, if not worth, at least what to pay him. Or her.

Unlike a CEO, whose compensation rides mainly on measures of the company's financial performance, a typical CIO takes home a pay package less dependent on metrics such as share price or return on equity. Generally, it's a mix of base salary and, for hitting soft and hard goals, bonuses. Sometimes there are shares of stock.

That's most CIOs. Then there are the heavy hitters, the CIO elite who set corporate strategy alongside the CEO, CFO and other top execs—and get paid like them.

Half or more of the total pay for these CIOs is tied to long-term incentive plans, involving measures of the company's performance over time, says

Vincent Milich, director of IT effectiveness at Hay Group, a consulting firm. "By hewing to performance measures that are long-term and linked

Reader ROI

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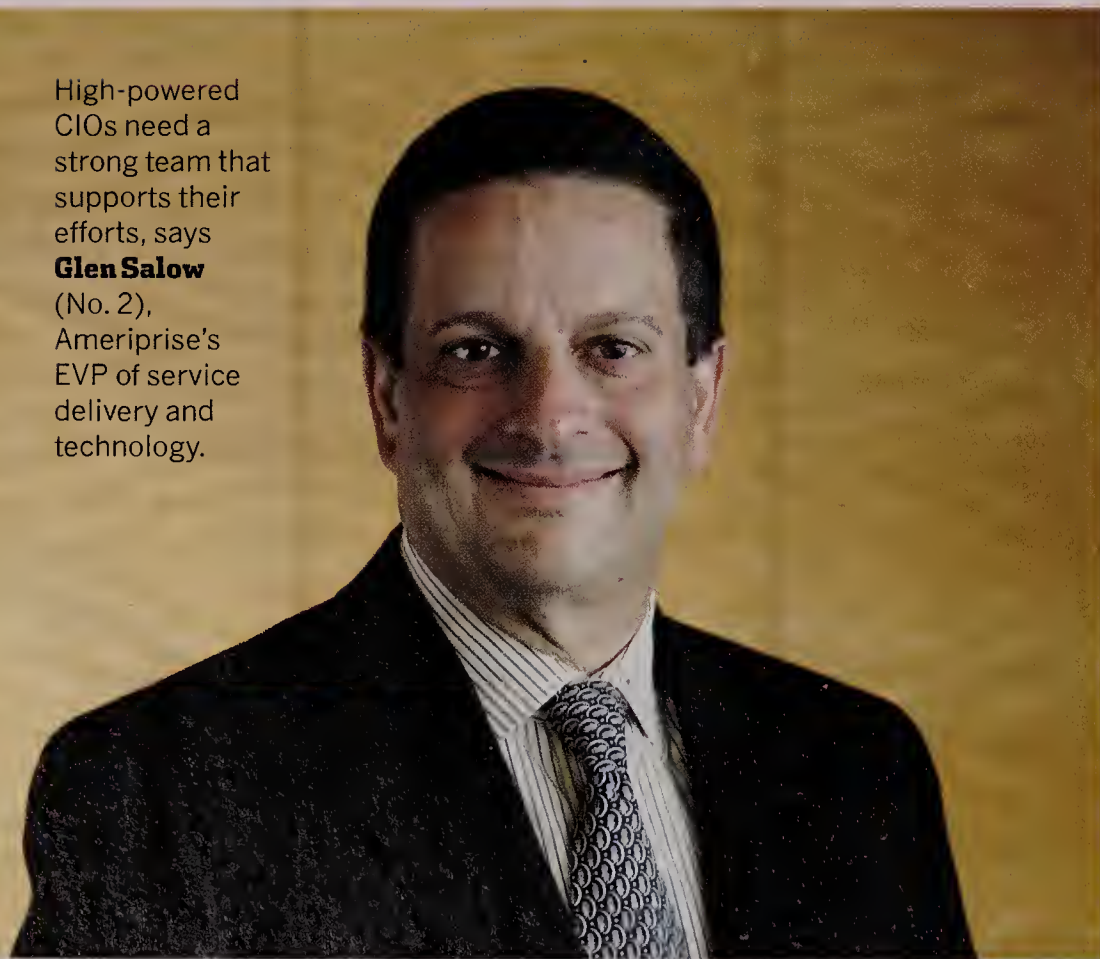


with business success, IT leaders align themselves with the CEO and the enterprise, and change the impression that they're a cost center and staff job," he says.

With so much at stake, these high-powered CIOs know that to be successful, they need trustworthy people in key positions, says Victor Janulaitis, principal at the compensation consulting firm Janco. CIOs at this level commonly bring an entourage of two or three managers with them who "understand what they say, how they say it and what they mean." (See "The CIO's Dream Team," Page 36.)

So who are this year's top-tier technology leaders and what do they make? Every year, public companies must file proxy statements with the Securities and Exchange Commission (SEC) to show what their top five highest-paid executives earn in salary, bonuses, perks and incentive pay such as stock and options awards. We studied the filings of the 1,000 biggest U.S. companies to see what compensation looks like for CIOs ranked and rewarded highly enough at their companies to be included.

High-powered CIOs need a strong team that supports their efforts, says **Glen Salow** (No. 2), Ameriprise's EVP of service delivery and technology.



Not many make the cut. This year, 47 top technology executives were listed at the 1,000 companies. That's down slightly from last year's 52, but about the same overall count since 2001.

Clearly, these companies—especially in financial services, manufacturing and retail—value their technology leaders. According to the latest SEC filings, which show 2007 compensation, our 47 superstars together earned \$112,651,463. That's down 18 percent from the \$137 million earned for 2006. Still,

at \$435,200, the average salary (excluding bonuses and other compensation) for this group far outpaces average salaries for CIOs generally. In our latest "State of the CIO" survey, CIOs at companies of \$1 billion or more in revenue reported an average salary of \$344,400.

Demand has declined for CIOs as their average tenure increases. And in this poor economy, companies are reluctant to assume the risk of replacing their top technology leaders, Janulaitis says. "Organizations are in a holding pattern in IT right now," he says.

Most of the fat payouts in 2007—77 percent—came not from salaries or bonuses but from the innocuous sounding "Other" category.

Other, indeed. That could include anything from company contributions to a CIO's 401(k) to thousands of dollars' worth of time on the corporate jet to millions in long-term incentive payouts. No. 1-ranked Barbara Desoer received \$10.5 million in total compensation as global technology and operations executive at Bank of America, with \$9.7 million of it coming from such sources. The two biggest chunks: \$4.7 million in stock and \$2.2 million in options. Incidentals included \$15,500 worth of corporate plane use and \$16,700 for financial counseling on how to manage her millions.

In May, Desoer received more recognition: a promotion to president of consumer mortgage operations for the merged Bank of America and Countrywide Financial when that acquisition closes later this year. She's moving from North Carolina to California.

YOU GOTTA HAVE FRIENDS

The only other CIO to break the \$10 million mark since 2000 was Randy Mott of Hewlett-Packard in 2005. A stock award of \$7.1 million that year, when he quit Dell for HP, drove his compensation up.

Ten million dollars is "rarefied air," says Chris Patrick, a partner in the global leader CIO practice at recruiting firm Egon Zehnder. So what does it take to operate in such an atmosphere?

Just ask Glen Salow. The executive vice president of service delivery and technology at Ameriprise didn't get to No. 2 on the list, with a \$7 million pay package, without learning along the way what makes a high-powered CIO. Mostly, he says, it's the people around the CIO.

Salow surrounds himself with colleagues who voice diverse perspectives, and he holds on to those with whom he works well, including an intellectual property attorney and a number of communications professionals at both the corporate level and within the technology group.

A **SNAPSHOT** IN TIME

Caveat: Those on our list are not necessarily the highest-paid CIOs in the U.S. for the past year. There may be other CIOs who took home multiple millions. But we don't know who they are because other officers at their company had bigger pay packages and the SEC requires that compensation be revealed for only the top five.

Ralph Szygenda, CIO at General Motors, for example, is someone recruiters regard as a top CIO, but he did not make our list; the lowest-paid of GM's top five officers last year was Thomas Stephens, who, for leading global powertrain and quality, got \$4.9 million. Maybe Szygenda made \$4.8 million. GM declines to comment.

And, of course, there may be CIOs raking it in at private companies, which keep their financial data, including compensation, secret.

For those reasons, we can't draw statistical comparisons year over year from this compensation data. Rather, the list is a snapshot—a revealing one, to be sure—of one measure of the CIO.

OUR **NO. 1**

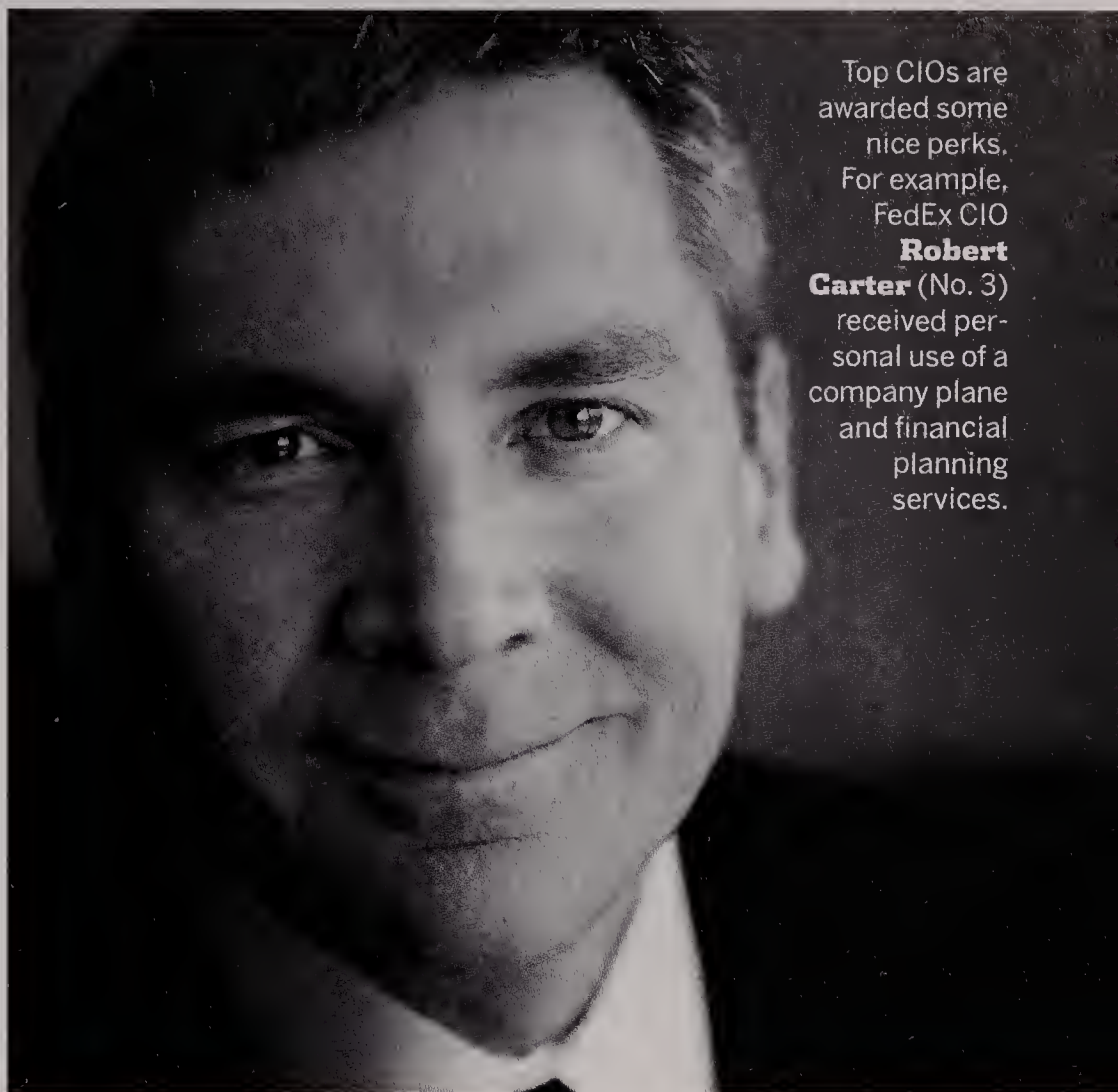
Bank of America's Desoer typifies several aspects of the technology elite. Financial services firms are built on IT and traditionally pay their IT leaders well. Hence, financial firms dominate the list, with 15 included. Also, like 20 others on the list, Desoer is more than a CIO. She manages the bank's several CIOs, oversees operations and sits on its management operating committee, among other duties.

Wearing two and three hats can be a fruitful, if exhausting, career path for CIOs. Desoer has been at the bank for three decades and led marketing and then consumer products before taking on technology and operations in 2005. That's a diverse background for a CIO, but one that reflects a hunger for well-rounded technologists who understand how their companies make money and know what customers want, even before they want it.

For example, Desoer oversees Bank of America's bill payment program, which accounts for 25 percent of all payment transactions in the U.S., the bank says. That's a heck of a lot more strategic than managing an application rollout. Last year, the Haas School of Business at the University of California, Berkeley, named her "Business Leader of the Year."

WHO'S **YOUR BUDDY?**

Any CIO expecting to rise high must find common ground with the CEO, says Egon Zehnder's Patrick. "Make his or



Top CIOs are awarded some nice perks. For example, FedEx CIO **Robert Carter** (No. 3) received personal use of a company plane and financial planning services.

her goals your goals," he says.

As Ameriprise's Salow puts it, "Any CIO who doesn't say the No. 1 person they need to have a great relationship with is the CEO is kidding himself."

CEOs think so, too, according to Bob Badavas, president and CEO of staffing firm TAC Worldwide, a private company. The best CIOs aren't assessed by how infrequently servers fail or whether employees can get e-mail on the road. Those IT operations items are assumed, just like similar basics by the CFO, Badavas said, speaking at the CIO Leadership conference in May.

"CIOs must move beyond the plumbing," he said. "CIOs are paid to take a full seat at the strategic planning table."

Steve Morin, TAC's VP and CIO, declined to discuss what he gets paid.

FEMALE POWER

In addition to her accomplishments, Desoer at Bank of America is notable for her chromosomes. She's one of nine women on this year's list—the highest number of female tech execs who've made it since we started doing this research.

A woman topped the list once before. In 2000, Leslie Tor-tora of Goldman Sachs was No. 1, with \$9.5 million.

Although the number of females in IT leadership positions has declined from 15 percent in 2004 to 12 percent last

IN THE MONEY

Top-paid Fortune 1000 CIOs in 2007: What they made

Technology Executive	Company / Industry	Total 2007 Compensation*	Salary
1. Barbara Desoer Global Technology & Operations Executive	Bank of America <i>Financial Services</i>	\$10,532,513	\$800,000
2. Glen Salow EVP Technology & Operations	Ameriprise Financial <i>Financial Services</i>	\$7,029,188	\$475,000
3. Robert Carter EVP, CIO	FedEx <i>Services</i>	\$5,461,269	\$709,678
4. Tim Shack EVP, CIO	PNC Financial Services Group <i>Financial Services</i>	\$4,896,181	\$510,000
5. Mark Boxer President & CEO Operations, Technology, Government Services Business Unit, EVP	Wellpoint <i>Health Care</i>	\$4,878,008	\$693,654
6. Bob Willett CEO Best Buy International, CIO	Best Buy <i>Retail</i>	\$4,677,735	\$685,577
7. Dave Kepler EVP, Chief Sustainability Officer, CIO & Corporate Director of Shared Services	Dow Chemical <i>Manufacturing</i>	\$4,672,827	\$562,310
8. Randy Darcy EVP Worldwide Operations & Technology, CTO	General Mills <i>Manufacturing</i>	\$4,449,958	\$500,000
9. Bob DeRodes EVP, CIO	Home Depot <i>Retail</i>	\$4,296,143	\$774,788
10. Larry Kittelberger SVP Technology & Operations	Honeywell International <i>Manufacturing</i>	\$4,075,648	\$606,250
11. Robert Golden EVP Operations & Systems	Prudential Financial <i>Financial Services</i>	\$3,514,082	\$425,000
12. Bill Chenevich Vice Chairman Technology & Operations Services	US Bancorp <i>Financial Services</i>	\$3,446,061	\$475,018
13. Linda Goodspeed EVP of IT & Business Development	Lennox International <i>Manufacturing</i>	\$2,968,830	\$384,119
14. Joseph Smialowski EVP of Operations & Technology	Freddie Mac <i>Financial Services</i>	\$2,770,674	\$550,000
15. Thomas Kingsbury SVP Information Technology, E-Commerce, Marketing & Business Development	Kohl's <i>Retail</i>	\$2,485,270	\$778,333
16. Jana Schreuder President, Worldwide Operations & Technology	Northern Trust <i>Financial Services</i>	\$2,473,176	\$481,250
17. Byron Vielehr CIO	Dun & Bradstreet <i>Financial Services</i>	\$2,285,378	\$375,000
18. Anna Ewing EVP Global Software Development & CIO	Nasdaq OMX Group <i>Financial Services</i>	\$2,201,253	\$375,000
19. Bruce Goodman SVP, Chief Service & Information Officer	Humana <i>Health Care</i>	\$2,175,308	\$474,712
20. David Johns SVP, Chief Supply Chain & IT Officer	Owens Corning <i>Manufacturing</i>	\$1,816,368	\$367,500
21. Gary King EVP, CIO	Chico's FAS <i>Retail</i>	\$1,753,429	\$500,000

Desoer will become president of consumer mortgage operations when Bank of America completes its acquisition of Countrywide Financial.

Boxer retired July 1; Lori Beer, SVP of enterprise solutions, is acting CIO.

Willett's figures are for Best Buy's fiscal 2008.

DeRodes plans to leave Home Depot at the end of 2008.

Smialowski resigned June 2007, remaining special advisor to the CEO until Dec. 07.

Goodspeed's employment agreement wasn't renewed, according to Lennox SEC documents; she left Lennox Dec. 2007, forfeiting \$118,910 in stock.

CIO₂CIO

Today's IT Leaders on Market Trends

THE POWER OF TELEPRESENCE

As companies shift toward high-definition video conferencing and telepresence solutions, it's clear that there is a need for managed services.

Video conferencing technology and the manner in which it is delivered have evolved to meet the challenges of connecting the modern enterprise—allaying CIOs' concerns about stability and creating the ultimate user experience. Standard solutions are still in place, high-definition solutions are coming into their own, and telepresence technology is maturing and stabilizing—all of which makes video conferencing more feasible at all levels.

However, it's critical to work with a managed services provider to ensure the consistent quality and reliability of high-definition video conferencing and telepresence solutions. Managed services empower participants to concentrate on their meetings, rather than the "behind-the-scenes" technology that makes these real-to-life and fully immersive experiences a reality.

Today's Video Conferencing Market

IDG Research Services recently conducted a worldwide study of global IT leaders, gauging their thoughts on video conferencing solutions. Some of the key findings include:

- Connecting employees at disparate locations is and will remain the top use for video conferencing over the next two years.
- More than half of respondents rate access to the latest technologies as a key benefit to using a managed service provider for their video conferencing needs.
- Sixty-nine percent of worldwide respondents say that technical support and troubleshooting are a critical or very important factor when selecting a

managed service provider for video conferencing.

"It's the three C's: cost, connectivity and convenience," says the senior IT director of a global automotive company. "Those are the things that have to be part of the deal."

There are business needs, technological developments and even social issues driving the market for video conferencing and telepresence solutions. There is also a desire to increase productivity among remote workers and tighten budgets—both prompting a reduction in travel. To serve as a replacement, telepresence, with its fully immersive qualities, is a realistic option.



Connecting remote employees is top among the U.S. and India respondents, each at 73 percent. Other uses include connecting with clients and customers (48 percent), conducting board of directors meetings (43 percent), and connecting with suppliers and partners (39 percent).

"Face-to-face contacts, especially with a global organization, are important," says the IT director of a global manufacturing company.

"We're doing video conferencing today because we need to see parts and see manufacturing defects and be able to correct that."

It's All About the Service

IDG survey respondents have a clear view into the services they need from a managed service provider for an application as critical as conferencing.

About CIO2CIO:

This peer-based thought leadership program analyzes quantitative research and tests it via qualitative interviews with actual CIOs. The resulting executive insight is then disseminated via CXO's multimedia assets. To learn more about the CIO2CIO program, please contact mavery@cxo.com.



CIO₂CIO

Today's IT Leaders on Market Trends

Their priorities are:

- Technical support and troubleshooting (69 percent)
- Testing hardware and network (66 percent)
- Access to agents to modify conferences in session (64 percent)
- Monitoring hardware and network during sessions (64 percent)
- Maintenance and hardware/software upgrades (60 percent)

When choosing a provider, 64 percent indicate that their potential partner must be an expert in both data and voice. There is also widespread interest among the respondents in working with a managed services provider that can manage both audio and video conferencing.

Nortel provides an integrated solution that delivers both technological reliability and communications effectiveness. Through its Multimedia Services portfolio—which includes video conferencing, webcasting, podcasting and audio conferencing—the company ensures that management and support services are streamlined and optimized for effective conferencing. By offering full turnkey solutions, Nortel ensures a greater return on investment.

“By combining equipment and services, Nortel offers a comprehensive telepresence solution,” says Hugh McCullen, General Manager, Multimedia Services, Nortel. “With our full range of services, the current technology and ongoing support, all you have to do is show up for the meeting.”

By working with both Polycom and TANDBERG, Nortel brings immersive telepresence experiences to global conferencing. Solutions include a full cinematic view, symmetrical environment and life-size images, providing an in-depth, in-the-room conference experience. Nortel's offerings are also interoperable with all standards-based video conferencing solutions.

There are service delivery choices as well. For example, by choosing a fully hosted model, an enterprise can avoid initial capital investments; the cost of using the equipment is built into the services cost. By choosing the managed service model, the business invests in the infrastructure, which Nortel then manages.

Managing and Measuring the System

Measuring the technical and business requirements of global conferencing systems is a challenge for most organizations. First, there are the more tangible aspects of video conferencing and telepresence effectiveness: signal quality, equipment reliability and integration issues. These factors are more easily measured and reported.

The less tangible aspects include the impact on the business and the effectiveness of the conferencing system in increasing productivity. Survey respondents say they rely on the following factors to measure effectiveness:

- Executive feedback (60 percent)
- Cost savings (60 percent)
- Network reliability (54 percent)
- Participant experience (53 percent)
- Cost of service (52 percent)

There is a constant demand for higher quality and faster speed, which is leading companies to shift and upgrade to high-definition video and telepresence. Boosting bandwidth and upgrading the conferencing infrastructure directly addresses concerns about signal quality, system speed and any lingering concerns about reliability.

Whether they need to conduct meetings and training sessions or connect employees, partners and suppliers, companies require a robust form of communication. As those requirements have scaled up, so have the quality, reliability and robustness of high-definition video conferencing and telepresence solutions.

To obtain the best possible experience with your video conferencing technology, it's important to work with a provider that can deliver reliability, consistency, quality and effectiveness—while also ensuring a solid return on your investment. As a turnkey managed services provider, Nortel ensures that management and support services are streamlined and optimized, so that all you have to do is show up for the meeting.

Go to www.cio.com/whitepapers/nortel-tp to obtain a free download of the white paper “Seeing is Believing.” Based on a major research survey by IDG Research Services, this paper draws on peer insights to help CIOs reap the benefits of telepresence and managed services.



Custom Solutions Group



Technology Executive	Company / Industry	Total 2007 Compensation*	Salary
22. Hubertus Muehlhaeuser SVP, Strategy, Integration & IT; General Manager, Engines	Agco Manufacturing	\$1,731,642	\$403,564
23. Michael Maslowski SVP, CIO	CenturyTel Telecommunications	\$1,717,317	\$343,396
24. Thomas Frank EVP, CIO	Interactive Brokers Group Financial Services	\$1,672,821	\$300,000
25. J.W. Ripley SVP, Planning, Information Technology & Compliance	Corn Products International Manufacturing	\$1,663,015	\$343,000
26. Michael Cheles VP IT	MEMC Electronic Materials Manufacturing	\$1,603,563	\$229,500
27. Mahvash Yazdi SVP, Business Integration & CIO	Edison International Utilities	\$1,422,326	\$379,529
28. John Alexander Du Plessis Currie EVP, CIO	Brightpoint Telecommunications	\$1,420,527	\$434,000
29. Tim Sullivan EVP, CIO	SunTrust Banks Financial Services	\$1,376,156	\$461,363
30. Rob Autor EVP, CIO	SLM Financial Services	\$1,358,179	\$349,039
31. Joe Osbourn EVP, Worldwide CIO	Tech Data Services	\$1,337,938	\$478,677
32. Lisa Bachmann SVP Merchandise Planning/Allocation, CIO	Big Lots Retail	\$1,333,129	\$412,747
33. Paul Hoogenboom SVP Manufacturing & Operations, CIO	RPM International Manufacturing	\$1,320,296	\$325,000
34. Greg Tranter SVP, CIO	Hanover Insurance Group Financial Services	\$1,228,235	\$346,539
35. Jeanne Moreno VP, CIO	Snap-On Manufacturing	\$1,227,819	\$303,647
36. Calvin Sihilling EVP, CIO	Nash Finch Services	\$1,106,071	\$359,581
37. Raymond Voekler CIO	Progressive Financial Services	\$1,028,360	\$347,692
38. Dudley Sondeno SVP, Chief Knowledge & Technology Officer	Southwest Gas Utilities	\$910,312	\$260,326
39. Richard White SVP, CIO	MPS Group Services	\$884,833	\$250,000
40. Thomas Gardner VP, CIO	Allegheny Energy Utilities	\$872,010	\$300,000
41. Cara Kinzey SVP of IT	RadioShack Retail	\$775,528	\$287,894
42. Larry Thomas VP, CIO	Landstar System Services	\$771,733	\$200,000
43. Richard Flaks SVP Planning, Allocation & IT	Children's Place Retail Stores Retail	\$735,019	\$484,269
44. Richard Smith SVP, CIO	CarMax Retail	\$729,820	\$328,154
45. Dan Canzano VP IT	Paychex Financial Services	\$599,059	\$326,780
46. Laurie Douglas SVP, CIO	Publix Super Markets Retail	\$555,793	\$465,650
47. William Shanahan VP IT	NBTY Manufacturing	\$410,662	\$229,881

*Includes bonus, stock, options, incentive pay, pension contributions and other compensation



Dow Chemical CIO **Dave Kepler** (No. 7) posted the highest total compensation for an IT executive in the manufacturing sector.

year, according to recruiting firm Sheila Greco Associates, the number of female CIOs is up from 7 percent in 2000 to 9 percent last year.

The nine in our ranking collectively pulled in more than \$23 million in 2007 and come from a variety of industries: financial services, manufacturing, utilities and retail. They are high earners, too. Average compensation for the women on the list is \$2.6 million, compared with just under \$2.4 million for all the men and women ranked. Anna Ewing at Nasdaq (No. 18, \$2.2 million) has been at the stock exchange for eight years and before that held executive IT positions at CIBC and Merrill Lynch. Mahvash Yazdi (No. 27, \$1.4 million) has been at Edison International for 11 years and led the company's integration of Southern California Edison. She also sits on the board of directors of Apria HealthCare.

PERKS

Some nice perquisites were bestowed on this year's group. Robert Carter of FedEx (No. 3, with \$5.5 million in total compensation) got \$103,069 worth of personal use of a company plane and financial planning services, among other items. Randy Darcy of General Mills (No. 8, \$4.4 million) got \$14,341 toward a car allowance and \$9,457 to cover flights and food for his spouse at business events. Dudley Sondeno of Southwest Gas (No. 38, \$910,312) received \$1,865 for club dues, \$480 for cable Internet service and \$240 for a cell phone. Honeywell's Larry Kittelberger (No. 10, \$4.1 million), who has made this list for several years, got \$50,000 under the company's "cash flexible perquisite program."

CIO Compensation

For more about **TOP-PAID CIOs**, read **CIO Compensation Includes Lots of Perks** at www.cio.com/article/156151.

CIO.com

When you make the big bucks, you want to keep it safe. So home security services and equipment have become pretty common over the years. This year, Dave Kepler at Dow Chemical (No. 7, \$4.7 million) received such a benefit, as did Bill Chenevich of US Bancorp (No. 12, \$3.4 million), Desoer at Bank of America and Carter at FedEx, among others.

BONUSES

Just 12 of the 47 got cash bonuses, reflecting that penny-pinching (in this case, thousand-dollar-bill-pinching) is going on in corporate America. In past years, all but a handful of CIOs on this list received bonuses. Still, the dozen tech execs who got bonuses together received \$5.3 million and Joe Smialowski, who left mortgage company Freddie Mac last December, got the highest bonus: \$1.4 million. He's No. 14 on the list, with \$2.8 million in total compensation. These bonuses are typically tied to short-term goals, such as the company boosting product sales by a specific percentage, says Hay Group's Milich.

MISSING

Some stars fell off the list. A few CIOs didn't appear this year because other officers at their companies made more money than they did. At Sears, CIO Karen Austin, who made \$1.6 million in 2006, is no longer among the retailer's five highest-paid officers. Her compensation was so large that year because of a long-term incentive payout of just under \$1 million for hitting three years of goals. This time around, Austin wasn't eligible for such a payday and was edged out by a new head of customer strategy (\$1.2 million) and a new CFO (\$433,920). Longtime top-paid CIO Harvey DeMovick Jr., who made \$4.7 million in 2006, was reported in Coventry Health Care's proxy statement to have been replaced by a new corporate general counsel (\$2.7 million). These kinds of shifts happen every year, and DeMovick and Austin could easily return on next year's list.

RIDING INTO THE SUNSET

Several CIO stalwarts among the current group of high earners retired recently. Unless they change their minds about hitting sandy beaches or the golf links, they likely won't appear on next year's list. High-profile retirees include Amazon's Rick Dalzell, Northwest Airlines' Philip Haan, and J.W. Ripley at Corn Products International (No. 25, \$1.7 million). Home Depot's Bob DeRodes (No. 9, \$4.3 million) has announced he'll leave the retailer at the end of 2008, but has yet to reveal his plans. **CIO**

Senior Editor Kim S. Nash can be reached at knash@cio.com. To comment on this article go to www.cio.com/article/415663.

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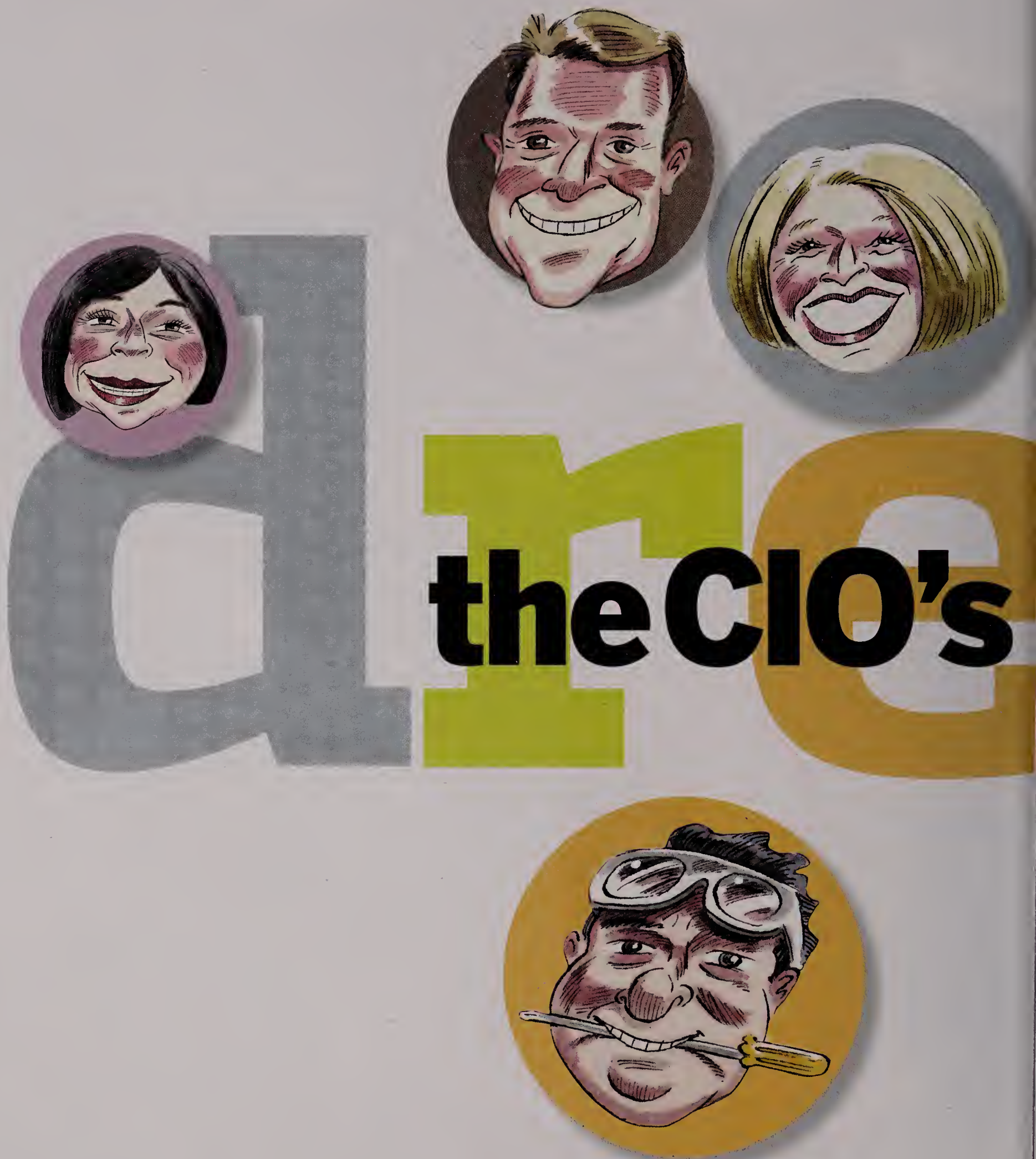
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Today's superstar CIOs have trusted project managers, publicists, troubleshooters and recruiters to keep them at the top of their game

BY KIM S. NASH

TEAM

Every big-time CIO knows you can't rise to the top without reliable people around you. And the smartest CIOs build a battle-tested posse to bring along from company to company, city to city.

And why not? A turnaround CIO wants a trusted operations expert with him when he lands at a troubled company, to help scope problems and not stab him in the back. A strategic CIO wants a grade-A communicator to help script messages and convey ideas to perhaps reluctant employees or nontechnical executives. What CIO wouldn't want to take along a project leader who has expertly planned and managed global software rollouts?

Glen Salow, executive vice president of service delivery and technology at Ameriprise Financial, a \$10 billion financial planning firm spun out of American Express, keeps tabs on 25 to 30 people he's worked with over the past several years. He brings them into his inner cir-

cle whenever he can. Today the entourage includes two communications pros and an intellectual property attorney. One of those communicators is Kathie Wilson, a change-management specialist; they've worked together 11 years, beginning at American Express. Among other tasks, Wilson monitors how her boss' technology changes are received by Ameriprise advisors and staff and helps position his communications to address those concerns.

"What gets you is not what you worry about, but the things you don't know you need to worry about," Salow says. "The way to deal with that is to surround yourself with diverse perspectives."

Most CIOs, he says, "keep a list of a dream team and you reach out to them often." Salow himself was recruited to Ameriprise by chairman and CEO James Cracchiolo after the two worked together at American Express. Salow is among the highest-paid technology

Reader ROI

- Who makes up a top CIO's entourage
- The role long-term advisors play

“Knowing the ins and outs of how your key reports work greatly accelerates

executives at a public company; according to SEC documents, he earned more than \$7 million in 2007. (See “Million Dollar CIOs,” Page 28.)

CEOs, of course, have recruited favorite managers to new gigs for a long time. CIOs with peeps, though, signal that technology executives know they have every bit as much on the line as a CEO, says Chris Patrick, partner at executive recruiting firm Egon Zehnder International and global leader of its CIO practice group. When superstar CIOs manage thousands of people and billions of dollars, Patrick says, “mistakes can move the company’s stock price in the wrong direction. You have to have trusted lieutenants.”

At these lofty levels, a CIO entourage can include a publicist to sculpt the image of the executive and sometimes his entire department, both inside and outside the company. A trusted right-hand man or woman gathers intelligence from the IT ranks and the influential players outside the technology group. A sharp lawyer negotiates with vendors and protects intellectual property. A technology operations specialist troubleshoots and fixes daily problems. A recruiter learns your work style and fills critical job openings with people skilled and compatible with the team.

Ken Harris, a former Pepsi CIO, credits a chunk of his success leading technology at Nike, Gap and now Shaklee to having found, and continued working with, project leader Rhonda Sias. What she adds to his entourage are technical excellence, business knowledge and smooth interpersonal skills. “It is rare to find someone who is highly developed in all three of these areas,” Harris says. In the past decade, the two have worked together at four companies. Sias has, says Harris, “saved my butt.”

THE POSSE THAT’S RIGHT FOR YOU

IT execs now reaching for superstardom can also make use of a posse. Jeff O’Hare specializes in turning around IT groups gone awry. Now CIO at West Corp., a \$2.3 billion business process outsourcing pro-

vider, O’Hare was previously senior vice president with enterprisewide responsibilities at Cendant, a \$20 billion services conglomerate that was later split into four companies. Cendant hired him to fix a \$1.5 billion outsourcing deal with IBM that had turned ugly. From Cendant and other companies where he has worked, O’Hare stays in touch with a group of IT professionals with specific, sought-after skills. These include technology purchasing and the financial intricacies of outsourcing contracts.

When he enters a turnaround situation, he wants tested and trustworthy people with him, he says. “Knowing the ins and outs of how your key reports work greatly accelerates your ability to initiate change and provides you with additional eyes and ears,” he says.

The CIO’s people get plenty from the relationship, too. Outside loyalists, such as recruiters and consultants who contract with certain CIOs, say they receive valuable referrals and future work. Hotshot technology professionals and others who move around with a particular CIO say that with each job together, they learn more and lead more.

Before he took a job as an IT consultant and manager at Accenture last year, John Melott followed one CIO—Wayne Sadin, now at Loomis—to six companies over 18 years. Sadin has been one of the CIO profession’s elite. Back in 2000 when he led technology at Bank United, he earned nearly \$760,000 and had perks typical of superstar CIOs: a car allowance, financial planning services and a country club membership. Melott and others who have worked with Sadin say he’s an innovator—marrying technology to business strategy before that was part of the CIO job description. Melott’s specialty is IT operations, including designing infrastructure, managing data centers and directing technical services. “He drug me all over the country,” Melott says. “But I always knew that anytime Wayne called, it was always going to be a great opportunity. With each one, my horizon was getting broader and broader.”

If you strive to be a CIO who can command a high-

your ability to initiate change and provides you with additional eyes and ears.”

—JEFF O'HARE, CIO, WEST CORP.

powered entourage, take a lesson or two from Melott, Sias and two other star polishers: recruiter Tony Pan-nagl, president of IS&T in Houston, and publicist Wendy Serafin, principal of the Nifares Group.

The Project Manager

Role: Run the big shows

RHONDA SIAS

President

The Mosaic Group

Good project managers are always in demand. Great project managers can stay employed forever, says Shaklee's Harris (Shaklee is a private multilevel marketer of cleaning and nutrition products). Harris realized this when he arrived as CIO of Nike in 1998 to find the European division's ERP project in trouble.

"The European business head made it clear that from his perspective, getting the project on track and completed successfully was my priority number one," Harris recalls.

He put Sias, who was already at Nike in the U.S., in charge of the project, relying on her know-how in putting together teams and motivating people, he says. "With someone like Rhonda, you know you are going to get a full and accurate picture of what is happening, communicated frequently, with a clear depiction of what decisions need to be made, what recommendations go with those decisions and what specific things I can do to help the project be successful," he says.

Sias also implemented the foundation for Nike's use of PeopleSoft human resources software, which she says was the company's first truly global application rollout. What Sias respects about Harris is his



blend of "visionary" IT thinking and "genuine heart." After Harris left Nike in 1999 to be CIO of Gap in San Francisco, Sias asked him for a job. He hired her to be VP of supply chain in 2000 and there she rescued a "troublesome" part of a major merchandising system, Harris says. She worked with him there until she left to be an independent consultant in 2003.

Sias later consulted with Harris at Chevron, where he worked as a consultant in 2004 and, for a few months recently, at Shaklee.

"We trust each other," she says. "He knows I'll ask for help if I need it. I won't surprise him. I provide leadership and a work ethic beyond your wildest imagination."

A relationship with the CIO “lets us understand the goals of the company,



The Recruiter

Role: Supply good staff quickly
 TONY PANNAGL
 Managing Partner
 IS&T

Job openings that linger because the CIO, HR and outside recruiters can't communicate frustrate everyone in the technology group.

Classic tales of internal HR staff not understanding what's needed in IT persist. But so does the penchant for CIOs to keep outside recruiters at arm's length. The thinking goes that recruiters

who get too close will either leak your company's plans to competitors or lure your best employees away.

Not true, according to Loomis's Sadin. He says the closer you get to a trusted recruiter, the faster you can work. With an IT talent shortage, good recruiters are now essential to CIO success, Sadin says.

When Sadin joined Bank United in 1998 as a turnaround CIO, he needed to fill a critical director-level position. The national firm he had been working with wasn't cutting it so he gave a local recruiter, Tony Pannagl, a shot. Within weeks, Pannagl brought two qualified candidates, one of whom Sadin hired.

Later, when Sadin joined Aegis Mortgage, he had Pannagl set up an office inside the firm to help internal HR fill 70 open positions, doubling the IT staff. He's had Pannagl's cell number in his cell phone ever since.

"A CIO needs to have recruiting firms that understand how he or she thinks," he says. His shared history with Pannagl means positions are filled quickly, making Sadin more efficient. Pannagl's success rates are better than those of internal human resources groups he has worked with in the past, Sadin says.

To fill jobs, says Pannagl, the two talk about the business goals of Sadin's company. Then they compare people they both know in terms of personality, technology backgrounds and competencies. They've come up with about a dozen IT staff prototypes they refer to in these conversations, Pannagl says. Shorthand like that is "very important," adds Sadin, "especially in a high-change or high-pressure environment."

If a recruiter knows a CIO's plans three or six or more months out, he can earmark candidates for those future projects. "This intimate relationship with Wayne and his staff lets us understand the goals of the company, which allows us to screen candidates better," Pannagl says. "Wayne knows I'm not going to bite the hand that feeds me."

Make Your Team Shine, Too

Help your direct reports be successful, too. Read **How to Develop the Next Generation of I.T. Leaders** at www.cio.com/article/341067.

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which allows us to screen candidates better.”

—TONY PANNAGL, MANAGING PARTNER, IS&T

The Publicist

Role: Make the CIO look good

WENDY SERAFIN

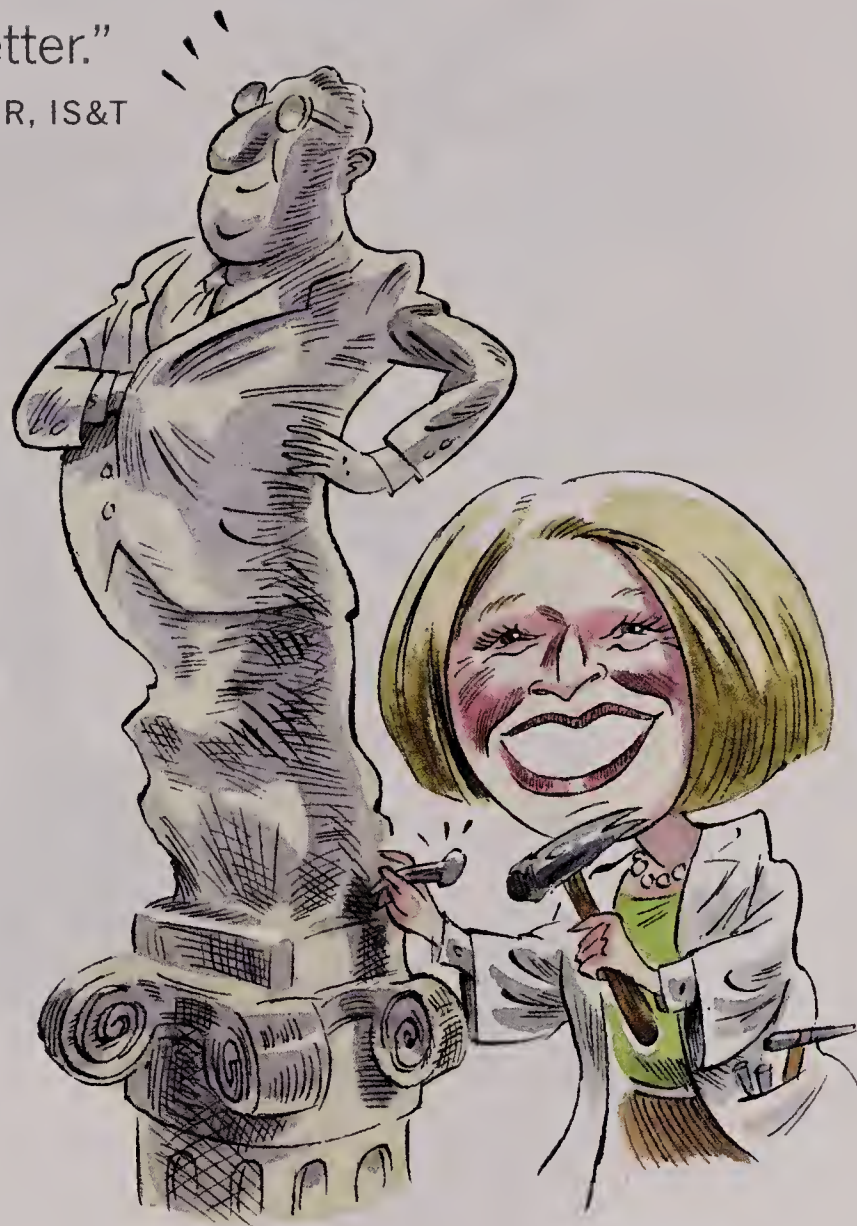
Principal

Nifares Group

We all know CIOs who can't talk business strategy as well as they should. Yet it's one of the most important skills a CEO wants from a CIO. Many technology leaders will admit to needing help to convey their ideas to colleagues above and below. A publicist can help with that, as well as build the CIO's reputation outside the company. A CIO with a good image can attract new talent to the IT department.

Chicago-based Wendy Serafin spotted this need when a former coworker became the CIO of her company, and few people outside of IT knew of his talents and achievements. She was working in the marketing department and knew she could get the word out about her modest IT friend better than he could himself. She did so, then started her own business handling communications for tech-exec clients.

“Business results are there but they camouflage it with IT-speak,” Serafin says. For one client, CUNA Mutual Group, a financial services firm with \$8.3 billion in assets, Serafin develops the IT annual report. The booklet tells the story of the IT department's strategy, vision and accomplishments each year along with other metrics to quantify the department's successes. It also highlights how IT runs like a business. Executives will sometimes take it on sales calls with prospective clients to show how CUNA Mutual's IT strategy supports business goals, she says. Serafin's other clients have included the Information Technology



Association of Wisconsin—where she advised CIOs how to communicate their accomplishments. In addition, from 1999 to 2001, Serafin worked with Rick Roy, then CIO at Metavante a \$1.6 billion banking technology firm. One of her roles was communication leader for Metavante's internal technology steering committee, helping to convey the group's purpose and results to the rest of the company. Roy is now SVP of Customer Operations at CUNA Mutual, and gave Serafin the entree to the company.

Another task for Serafin: Getting CUNA Mutual technology leaders quoted in business media, either through press interviews or writing articles. CIOs who don't market themselves and their group this way may be hurting their companies' ability to attract talent, she says.

“They don't understand the impact external communications can have for recruiting and retention,” she says. “The next-generation workforce looks at blogs and websites and Google when they're looking for a job. They have to find you.” The CIO's reputation does influence potential hires, agrees Egon Zehnder's Patrick. Big-name CIOs “can attract talent simply because of who they are and being visible.”



The Operations Expert

Role: Troubleshoot

JOHN MELOTT

IT Consultant and Manager

Accenture

An operations expert relieves the CIO of the daily burdens of down-and-dirty IT problems, but is a bit more tactical than a deputy CIO or other “second-in-command” managers.

John Melott can parachute into a problem IT situation and in a matter of weeks, assess infrastructure and engineering, top to bottom, says Loomis’s Sadin.

When they met in 1983, Sadin recalls, Melott was night-shift lead computer operator at Murray Financial in Dallas (where he’s still based). Melott came into Sadin’s office to volunteer an explanation of what was wrong with Sadin’s data center plans. For one, the walls were in the wrong place and cabling would be a bear. “That

“You just take care of them. If you don’t sift through the events and information, you can get your CIO bogged down in too much day-to-day stuff.”

—JOHN MELOTT, I.T. CONSULTANT AND MANAGER, ACCENTURE

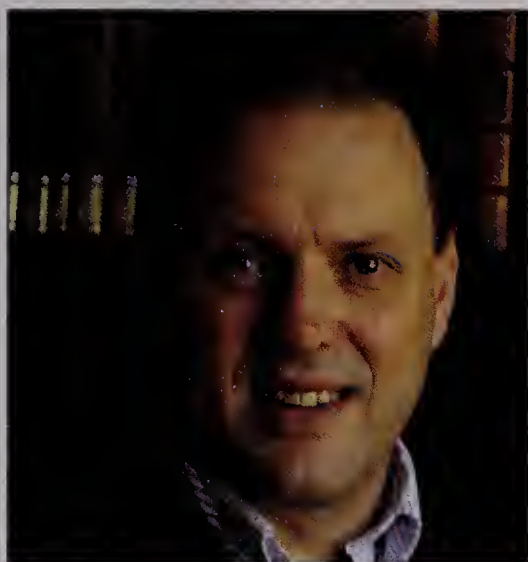
marked him as a comer, as far as I was concerned,” says Sadin. “I listened to him and he was right.”

Sadin recruited Melott to almost every company he worked at thereafter—five cities in four states. Sadin typically brings in Melott when a company has outgrown its IT department, and its staff and approach need changing. Melott’s value lies in his breadth of experience. “He’s certified in project management, certified in disaster recovery planning and boy, can he motivate people,” Sadin says.

Melott is most proud of his ability to shield a CIO from daily IT upsets. “You just take care of them,” he explains. “If you don’t sift through the events and information, you can get your CIO bogged down in too much day-to-day stuff rather than focusing on strategy.”

But you always, always tell your CIO about an IT problem that affects customers, Melott says. “When they don’t know about something not working, that makes them look foolish and if they look foolish then all of IT looks foolish.” **CIO**

Contact Senior Editor Kim S. Nash at knash@cio.com. To comment on this article, go to www.cio.com/article/415715.



ITIL Unlocks Business Value

V3 and the Importance of an Integrated CMDB

David Cannon

ITSM PRACTICE PRINCIPAL, HEWLETT-PACKARD

CANNON IS RESPONSIBLE FOR ESTABLISHING, BUILDING AND SUPPORTING IT SERVICE MANAGEMENT PRACTICES IN ASIA, THE UNITED STATES AND LATIN AMERICA. CANNON IS A FELLOW OF THE INSTITUTE OF SERVICE MANAGEMENT—THE HIGHEST LEVEL OF PROFESSIONAL ACHIEVEMENT IN THIS FIELD. MOST RECENTLY HE HAS CO-AUTHORED THE SERVICE OPERATION BOOK FOR ITIL VERSION 3.

The whole benefit of aligning IT around business services, such as custom order management, is that IT understands what's at stake, IT knows what the strategy is and what its contribution to that strategy is, and so does the business. David Cannon discusses the ways in which ITIL V3—already widely considered the most cohesive set

of best practice guidance for IT service management—supports better communication between IT and business services and, ultimately, better business outcomes. It's a relationship issue. In ITIL V3, we had to look at tools and solutions that focus more on mapping the service definition data to other existing data repositories and look at issues of ownership, control and maintenance. That shifts the focus to an integrated CMDB that supports what's now known in ITIL V3 as a Configuration

federation should be actionable and designed in a way to drive automation without manual intervention. Lastly, the enabling technology must be dynamic enough to respond to real-time changes and requirements. This dynamic approach is best achieved through tight integration of the integrated CMDB with dependency mapping technology.

“When you use a CMS, you're saying, ‘we're no longer a republic, we're completely coordinated.’”

Management System (CMS), which has one central aim: the ability to improve business outcomes.

Does CMS leverage existing systems?

Does CMS leverage existing systems?

CMS formalizes the integrations known as federation among multiple data repositories. In uncontrolled federation, what you have is everybody saying, “We're a republic and we'll just talk to each other once in a while but I'm going to continue doing my own thing.” When you use CMS, you're saying, “we're no longer a republic, we're completely coordinated.” The decisions around what data will be tracked, who will own it, how frequently it will be updated, and where it will reside will be made from a centralized point of view.

How does ITIL help deliver this value?

ITIL has articulated the concept of a service lifecycle. The purpose of the service lifecycle is to map IT activities to business activities at every stage in the lifecycle. One challenge in facilitating the right information exchange and measurements throughout the lifecycle is the need for a common context upon which to operate. An integrated configuration management database or CMDB functions as the information source on how IT components interrelate to support business services.

How has the concept of CMDB changed from ITIL V2 and V3?

One of the reasons configuration management has failed in many organizations is because they look at it solely as a technology issue, but it's not. It's a political issue.

What are the fundamental underpinnings of a CMS?

There are three fundamental underpinnings of a CMS from HP's perspective. First, the CMS must take a service-oriented, rather than an asset view. Second,

What one piece of advice would you like to leave us with?

Be practical. Don't build a monolithic CMDB. Instead, carefully federate your existing data repositories to create an environment that drives near and longer term business outcomes.

FOR MORE INFORMATION:

Download a copy of the HP white paper titled “ITIL V3 and your CMDB: using actionable federation to create a configuration management system” at www.cio.com/whitepapers/hp-ITIL. Further information may be also be found at www.hp.com/go/cms.

For more information, please join HP and Enterprise Management Associates (EMA) on July 30 for “The Future of CMDBs: What does ITIL V3 and the “new” Federated Universe Really Mean?” **Details at www.emausa.com/cmswebinarwithhp.**



Content management isn't easy, especially when your data is millions of miles away. Here's how NASA's IT team tackled...

A Delta II rocket blasts off from Cape Canaveral carrying the Phoenix spacecraft on its mission to Mars.



An

Out-of-This-World I.T. CHALLENGE

BY LAURIANNE MCLAUGHLIN

ON MAY 25, NASA'S PHOENIX MARS LANDER entered the Martian atmosphere at nearly 13,000 miles per hour. Its mission: a three-month sojourn to explore Martian soil and ice to answer the big question of whether the red planet can support life.

Phoenix landed successfully as a huge audience watched on the Web. Interest in the mission has been high: over the period of May 21-27, there were more than 8.7 million page views on the Phoenix section of the NASA

Reader ROI

- :: Tools and strategies for content management
- :: Experimenting with Second Life

Portal. Perhaps no one has watched with more interest than Jeanne Holm, chief knowledge architect for NASA's Jet Propul-



Phoenix team members celebrate the spacecraft's successful Mars touchdown in May.



The trick to managing all this content? “Architecting solutions that are scalable, flexible and robust at levels far beyond what is needed in a day-to-day environment so that content can be collected and processed quickly.”

—JIM RINALDI, JPL CIO

sion Laboratory (JPL), who, along with her team, is responsible for making sure all the images and video from this high-profile mission get managed and delivered to NASA staffers and the public without a hitch. Also watching as the mission unfolds: Jim Rinaldi, CIO of JPL, which designs spacecraft such as the Mars landers and plans the missions.

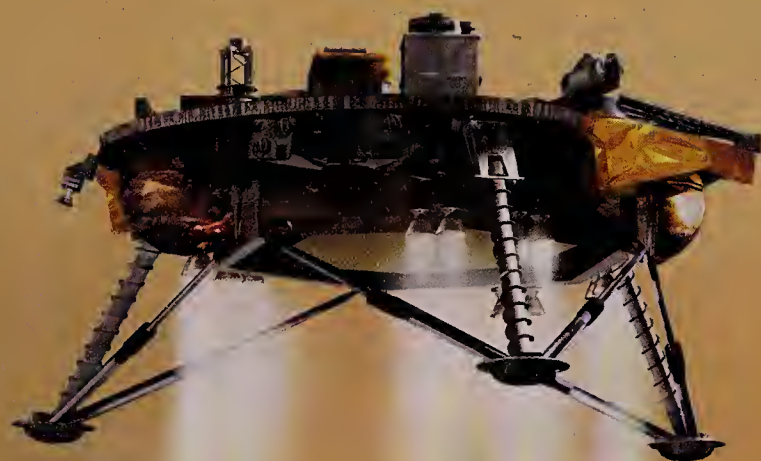
“The level of interest around the world has made Phoenix websites across NASA very popular,” says Rinaldi. “The amount of information being presented is much more timely and it keeps the interest going. The pictures are displayed almost as fast as we get them from space.”

Few IT pros will ever work on a project as high-profile as a Mars landing. For Holm, who handles the content management part of the mission, this is

round two: She also oversaw content management for NASA's JPL during the last Mars mission in 2004.

These are not your ordinary content management projects. Consider the scope and challenges posed by the current mission. Video and images must travel from Mars on a unique journey via NASA deep-space antennas before making their way onto NASA computers to be processed and then posted to the Web. As Holm matter-of-factly puts it, “Our data is millions of miles away.”

The images and video go out multiple ways to various audiences: internally to NASA staffers, and to the public via the University of Arizona's Web servers and the NASA.gov website. The NASA site also must serve up real-time video of the Earth-based events, conferences, science discussions and other events



Phoenix touches down on Mars in an artist's rendering. The mission's content is feeding to podcasts, NASA TV on the Web, Second Life, museums and elsewhere.

that are taking place around the mission. And NASA is not afraid to go Web 2.0: The Mars landing was broadcast in its own area on Second Life.

The trick to managing all this content? "Architecting solutions that are scalable, flexible and robust at levels far beyond what is needed in a day-to-day environment so that content can be collected and processed quickly," says Rinaldi.

Rinaldi, Holm and their colleagues gave us a look at the massive amount of data and effort it takes to accomplish their IT mission, as well as the tools and strategies they're using, from content management to hardware hosting. What they've learned from this historic mission to Mars can help you with your next content management project.

Millions of Viewers, One Big Question

This Mars mission seeks answers to some burning scientific questions, the biggest being whether the Martian arctic can support life. To answer that, the mission will ask what the history of water is in the area and how polar dynamics shape the climate of Mars, for example. The scientists will make use of gadgets far more innovative than Apple could imagine, the coolest of which may be a robotic arm built by JPL and Alliance Spacesystems that will dig, scoop and grab soil and ice for analysis.

The mission team includes scientists from the University of Arizona, NASA engineers from JPL and flight systems experts from Lockheed Martin Space Systems. Holm works on the content management for the mission along with colleagues including Carla Bitter, education and public outreach manager for the mission for the University of Arizona, and Charles White, JPL's expert on virtual world technologies, who heads up the Second Life work.

For Holm and her colleagues, the current mission is an opportunity to build on the content management lessons they learned during NASA's 2004 expedition to the planet.

For instance, that mission marked the first time that images coming from deep space could appear on the Web within about 15 minutes or so of NASA receiving them. "It was a huge mindshift," Holm says. "Before, scientists would analyze the images for hours, days, weeks, before publishing them with the analysis. Now that analysis happens with the worldwide community in real time."

In fact, circa 2002, NASA's content management infrastructure was far from sophisticated, Holm says.

A single server in the basement supported the NASA website where the public got news of missions, she says. If you visited the site back then, you might see a message like "Tune in at 3 for a press conference," she says. "That was state of the art for large events at NASA." Delivering information via the Web was a "time-consuming, onerous process."



The 2004 Mars mission benefited from NASA's launch of a new portal in 2003 and from working with content management vendor Vignette to better manage and publish its content to its internal and public audiences, Holm says.

"For this [2008] mission, we are continuing what we did in 2004, where we provide 'real-time' images as they are received on Earth from the spacecraft," Holm says. "We see them at the same time as the public sees them."

Well, almost. The images that comprise the actual video from Mars must travel for a while via deep-space antennas, then be processed on Earth before the video is posted. So it's not "real-time" video from Mars, but it's still showing up rather quickly.

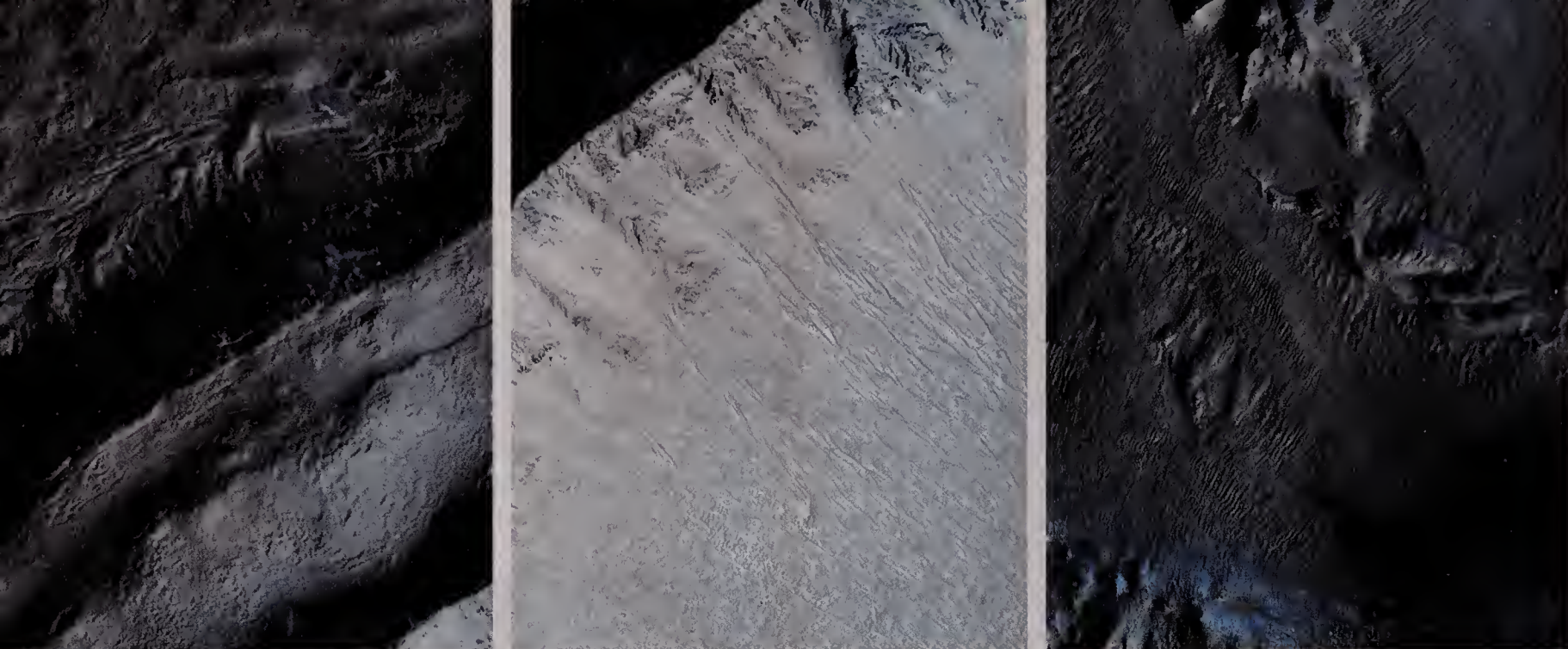
How many people will tune in on the Web? "Well over 250,000 users watched the Mission Control proceedings on NASA TV, with more than 50,000 connecting simultaneously," Holm says of the current expedition. "In 2004 there were more than 60 million unique visitors and over 550 million page views and 17.5 billion hits. Based on trends since then for our

To engage the public, NASA is trying Web 2.0 technologies. Visitors were able to view the Phoenix mission launch in Second Life.

Managing Content

Read about how one company tackled **CONTENT MANAGEMENT** at <http://www.cio.com/article/721/>.

cio.com



The mission seeks to answer the question of whether the Martian arctic, seen here, can support life.

other missions and launches, we expect to see a significant increase to this, perhaps twice as much.”

As for the sheer volume of data involved, the group served more than 330 terabytes of data in 2004 when the last Mars landings occurred, Holm says. There’s no doubt that figure will increase.

How NASA Outsources IT

To manage all those images and video, Holm, Bitter and their colleagues rely heavily on in-house content management and outside hardware and caching help.

“We get huge peaks of interest,” says Holm. “We want to handle those peaks—but have a cost-effective organization as well. The way we architect and serve information is key.”

A key tool the team uses in-house to keep the content organized is Vignette 7.2 (specifically, Vignette Builder and Vignette Portal), Holm says. Remember, the mission’s content is feeding to podcasts, NASA TV on the Web, Second Life, museums and elsewhere. “We’re taking the same content and representing it in many different ways and by all means,” Holm says.

Vignette has been key for the teams at the University of Arizona and JPL as they try to cull the best images from the mission, Bitter says.

“In previous missions, a system like this didn’t exist and people were sharing images via external drives,” Bitter says. Some of the images are put up immediately and captioned, or sent to museum audiences, while others are made part of huge mosaic pictures that display the majesty of what the NASA spacecraft encounters, she says.

In addition to the sheer volume of data that must be sifted through, challenges included the large, dispersed team, Holm says. “The content management system has to be easy to use and agnostic,” she says, “It’s all about speed and accuracy of data.”

Externally, the group uses SunGard to host the NASA Portal hardware and uses eTouch Systems

to manage it for the NASA CIO, Holm says. Akamai handles the caching. NASA TV also gets some additional streaming assistance from Yahoo, Holm adds.

Video for interactivity on the Web represents one of the big changes for modern-day missions for the public, Holm says. “There’s a visceral response we get from people. They feel like they’re really there.”

If this video failed because of overwhelming demand, it would be a lot more embarrassing than the crash of the now-infamous Victoria’s Secret Web fashion show in 1999.

“Having the hosting site external to the NASA network means we can get our jobs done, Holm says.

The metrics that NASA measures her group by are a bit different from that for most IT leaders. “Internally, if we don’t have the accurate data out there, we’re crucified,” she says. “Our scientists are very specific.” The second key metric: “The speed at which the content, analysis, video is being pushed to the public. To a big extent, we’re judged on our ability to serve that content.”

That’s why working with SunGard, Akamai and Yahoo becomes critical, she says. “You really have to understand you don’t want to make it so that success is a problem. We know we’re not going to do it ourselves.”

Technology That Engages Users

With each mission, NASA learns more about how to best present its content and target its efforts to various audiences.

“Our public audience has become more sophisticated,” Bitter says. “There are 8-year-olds out there downloading our podcasts.”

“We work really hard at explaining things to the public,” Holm says. “Our audience continues to grow. As the public becomes more educated, the challenge becomes, how do we continue to give new people understandable information, plus give other people more scientific information?”

Questions like this boil down to information architecture, Holm says. Her team wants an 8-year-old or a scientist to be able to drill down from the front page to find what he wants. That's one reason why the information architecture continues to become much more sophisticated, she notes.

For this Mars mission, user-generated content will play a big role. NASA learned its first important lessons about user-generated content at a tragic time. Holm's team was working on launching the NASA Portal during the four weeks preceding the space shuttle Columbia crash. "The intent was to bring it up the following Monday," Holm recalls. "I decided to do load testing as we went live," she says, so her team pushed the portal live a bit ahead of schedule. "Ten hours later, we lost the shuttle," she says.

Members of Congress and the public alike were able to come into the portal and get updates, she notes. "It was a horrible tragedy, but in that moment, our IT team was able to help the public."

Today, her team wrestles with new Web 2.0 technologies, both to encourage more dynamic collaboration between the teams using blogs and wikis, and to drive new public participation via the mission's Second Life project.

"It's a huge change," Holm says. "If people want to be engaged with NASA, we want them to be part of the family. It's brought a huge sense of excitement to us, too."

For example, on May 25, people watched the landing in NASA's new locale in Second Life. They came as avatars, dressed in virtual space suits and sitting in virtual bleachers, to view the event in an atmosphere that's a long way from the beaches of Florida during the famous space race days of the 1960s and '70s.

"It was amazing the amount of interest and participation," says Rinaldi of the Second Life initiative. "It is an emerging set of technologies that allow a different way of collaborating and participating in events. It still has a 'gaming' feel to it but its popularity is growing. We will continue to educate ourselves on the possibilities."

He also urges CIOs not to underestimate the impact of consumer IT and its growing impact on traditional IT. "CIOs should consider how their IT infrastructure and services expand well beyond the four walls of their company, data centers and current infrastructure. Customers of IT will utilize outside services with or without the IT organization. We should consider how IT enables this versus trying to overcontrol or stop it," he says.



Lessons Learned

On a personal level, what's it like being part of the IT team supporting a Mars mission? "These events are energizing and exhausting at the same time," Holm says. "We bring sleeping bags into the office. These sorts of events, you just don't sleep."

Big projects are never easy, no matter what planet they involve. So Holm stresses the need for thoughtful leadership to help you take your team where it needs to go. "The key is the leader needs to pace the team," Holm says. "You can't stress out every piece of your team at the same time."

And whether or not Phoenix finds evidence of life on Mars, the mission will help NASA in refining its content management tools and strategy.

"The lessons learned about using new technologies and techniques for outreach will translate directly to other NASA missions," says Rinaldi. "We touched people directly and they were very involved as they were able to follow the Phoenix Lander all the way down to the surface of Mars and as it began digging for signs of life." **CIO**

Mars video must travel via deep-space antennas before being processed and posted on Earth. Here: an image of Martian trenches dug by Phoenix's Robotic Arm.

Technology Editor Laurianne McLaughlin can be reached at lmcloughlin@cxo.com. To comment on this story, go to www.cio.com/article/365763.

How to Set Up a Mid-Market PMO

With countless projects always under way, CIOs need to feel confident that their teams have things under control in terms of project scope, budget, prioritization and time line. Few would argue that a project management office (PMO), well-planned and implemented, won't go a long way toward governing projects to more satisfactory conclusions. For many CIOs, it's a requirement.

"My philosophy is that there are three legs of the stool that are required in any successful IT department: a PMO, portfolio management and IT governance," says Eric Hungate, CIO of the Texas Association of School Boards, a nonprofit educational association.

When it comes to setting up a PMO, all CIOs struggle with securing buy-in, demonstrating value and choosing the right project methodology for the corporate culture. More than their larger-company peers, though, mid-market CIOs (those whose companies report less than \$2 billion in annual revenue) must grapple with finding staff and funding resources to develop an effective PMO. But a mid-market company's size and agility also allow its CIO to try out different processes that a larger company might not risk. Below, four Council members

share tactics to make their mid-market status an advantage when forming a PMO.

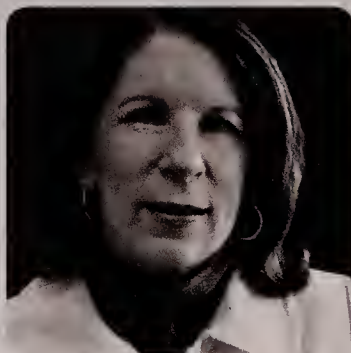
Advocate from the start. Mid-market CIOs have many priorities pulling them in different directions. That's why new CIOs should seize the opportunity to jump-start a PMO. "I used my honeymoon as the first CIO to advocate for a PMO, and then started to get the basics established," recalls Hungate. "My first step was to hire a PMO director."

Major new projects can also help launch a PMO. "When

I arrived at the county in 2004, it needed this type of discipline for the large projects we had lined up, especially a huge ERP implementation," says Toni Jelinek, CIO of Hennepin County, Minn., which has an operating budget of \$1.6 billion. Implementing an ERP system is complex and "with the PMO, county senior leaders had a baseline to understand why project management would contribute to the overall success of the project," says Pan Hall, Jelinek's director of enterprise PMO.

You don't need a big staff. "The size of a PMO is very dependent on the size of the IT organization, the scope of their activities," says Matt Hartzman, vice president of information services at the College

Continued on Page 52



Toni Jelinek

[ONE::LINER]

"My philosophy is that there are three legs of the stool in any successful IT department: a PMO, portfolio management and IT governance."

—ERIC HUNGATE, CIO, TEXAS ASSOCIATION OF SCHOOL BOARDS



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PRO·VOKE

-v. to stir or stimulate to action; to free colleagues from the status quo.

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Team Effort Is Key to Project Management Methodology

In smaller, more nimble organizations, CIOs can try unique models for project management and governance. In Hennepin County, Minn., PMO Director Pan Hall hired Karen Piet to work with a select group on a biweekly basis to set up an initial project management methodology. The 12-person team is open to anyone in IT and to select business partners.

"We call it the 'best practice' model. It's a grassroots effort that provides structure for different phases of project methodology, template advice and other aspects of PMO oversight," says Hall.

This collaborative effort is very different from buying a set methodology or adopting a well-known practice. Instead, Piet asks the team about the best documentation for a particular phase of a given project, and what the deliverables should be. Responses are compiled and discussed, and form the basis of the methodology. "Adoption of the PMO has been much smoother with this team-based effort, rather than going out and telling people that we have made the decision, and this is how it is going to be done," says CIO Toni Jelinek. —C.M.

PMO Templates to Try

At Pacific Blue Cross, the following are essential tools or templates used in the PMO project governance methodology.

- ▶ Monthly project portfolio traffic-light report
- ▶ Post-project review template
- ▶ Post-project review process
- ▶ Resource utilization spreadsheet
- ▶ Project role descriptions —C.M.

Mid-Market PMOs

Continued from Page 50

of American Pathologists, a \$125 million organization. He recommends a lean staff approach. Hartzman has a single dedicated PMO manager and two other staff members, and then the virtual PMO is filled in unofficially by other IT staff. "All my project managers are considered part of the PMO," he says. "There is no solid-line reporting relationship to the PMO manager, but all project managers attend a weekly PMO meeting, abide by the same standards and requirements, and view themselves as a team, albeit a virtual one."

Educate the rest of the team. Jelinek asked Hall to not only assess what type of PMO the county needed but to do marketing across the organization about a PMO's benefits. Hall conducted one-on-one staff sessions, held road shows in other departments, and attended management meetings equipped with research data demonstrating value. He also highlighted government-sector entities' PMO successes, rather than rely on private-sector case studies. To convince staff to embrace the PMO, Hall highlighted high-profile projects that had dragged on due to poor management and a lack of PMO oversight.

Stay nimble. The agile nature of a smaller organization can work in a CIO's favor. "We can move quickly: put templates in place, train the users and start seeing results," says Greg Brierley, PMO manager at \$750 million Canadian healthcare company Pacific Blue Cross. "We also make a point not to have an overly bureaucratic process with excess overhead."

Having Pacific Blue Cross located in one building also helped speed PMO implementation. However, Hennepin County's Hall cautions not to move too quickly. "Make sure the people around you are moving at the same pace; they need to internalize things," she says.

Show the value and benefits. A PMO's value is shown by the hard benefits it produces. All four CIOs are tracking metrics and highlighting benefits gained. Hungate has seen gains in operational efficiencies and project performance since the PMO launched. Pacific Blue Cross cites cost benefits from better budget tracking, and more knowledge around project prioritization and where dollars should be spent. Hennepin County's IT team has a better understanding of project scope and individual roles within large projects. "People have started to make decisions from a factual basis," says Hall. "Before, we would have an idea and then execute. With the PMO, the planning stage of the project is in place. With that comes success." **CIO**



Matt Hartzman

Carrie Mathews is group manager, member services, for the CIO Executive Council. Send feedback on this article to letters@cio.com.

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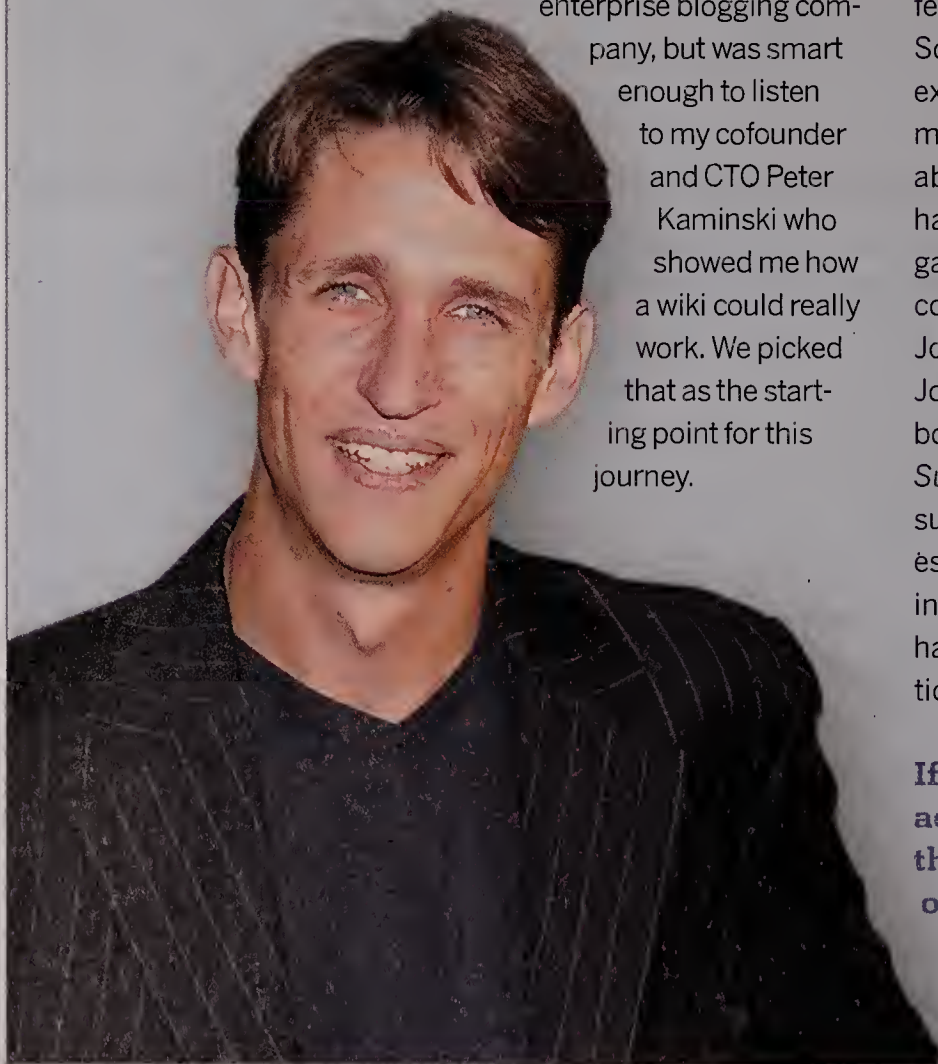
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Things I've Learned

THE VOICE OF EXPERIENCE * AS TOLD TO C.G. LYNCH

Ross Mayfield is the president and cofounder of Socialtext, which produces enterprise wikis. He shares his thoughts on collaboration and the consumerization of IT.



Even in a recession, opportunities arise.

We saw there were these new kinds of tools emerging in the middle of the first recession for the Valley. A lot of blogging took off solely because of the high rates of unemployment. People created new community platforms to scratch their own itch and be with their friends online. We saw an opportunity with these tools—which were first arising for consumers—to adapt them for enterprise use. I wanted to start an enterprise blogging company, but was smart enough to listen to my cofounder and CTO Peter Kaminski who showed me how a wiki could really work. We picked that as the starting point for this journey.

Most employees don't spend their time executing the business process.

That's a myth. They spend most of their time handling exceptions to business process. That's what they're doing in their [e-mail] inbox for four hours a day. E-mail has become the great exception handler.

Learning disappears because it's hidden away in an inbox.

It's not searchable through tags, profiles, feeds and folksonomies. So moving some of that exception handling into a more transparent, searchable wiki means that you have the opportunity to gain a different kind of competitive advantage. John Seely Brown and John Hagel wrote this book called *The Only Sustainable Edge*. They suggest that the greatest source of sustainable innovation is how you're handling these exceptions to business process.

If you want to accomplish big things with technology, it's not just IT.

It's line of business

management engaging the base of stakeholders. Otherwise, what you end up doing is creating tools of control, and these create a barrier to collaboration.

The consumerization of IT is going to have a profound impact on CIOs.

I think it happens in a couple of ways. The rate of innovation in the consumer sphere on the Web far outpaces what's happening in the enterprise. New tools that have better social dynamics can be adapted for enterprise software. New models for collaboration are being created. Massive demographic shifts are also happening. It's not just that the Baby Boomers are leaving the workforce. The Net gens, the 16- to 24-year-olds, have grown up using the Internet as part of their daily life. This generation will profoundly impact the enterprise. They grew up using social software. What are you learning about them and their preferences for tools?

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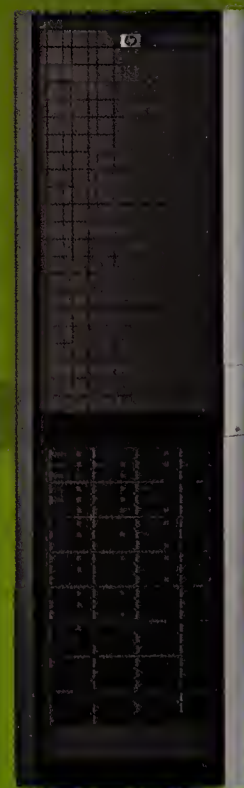
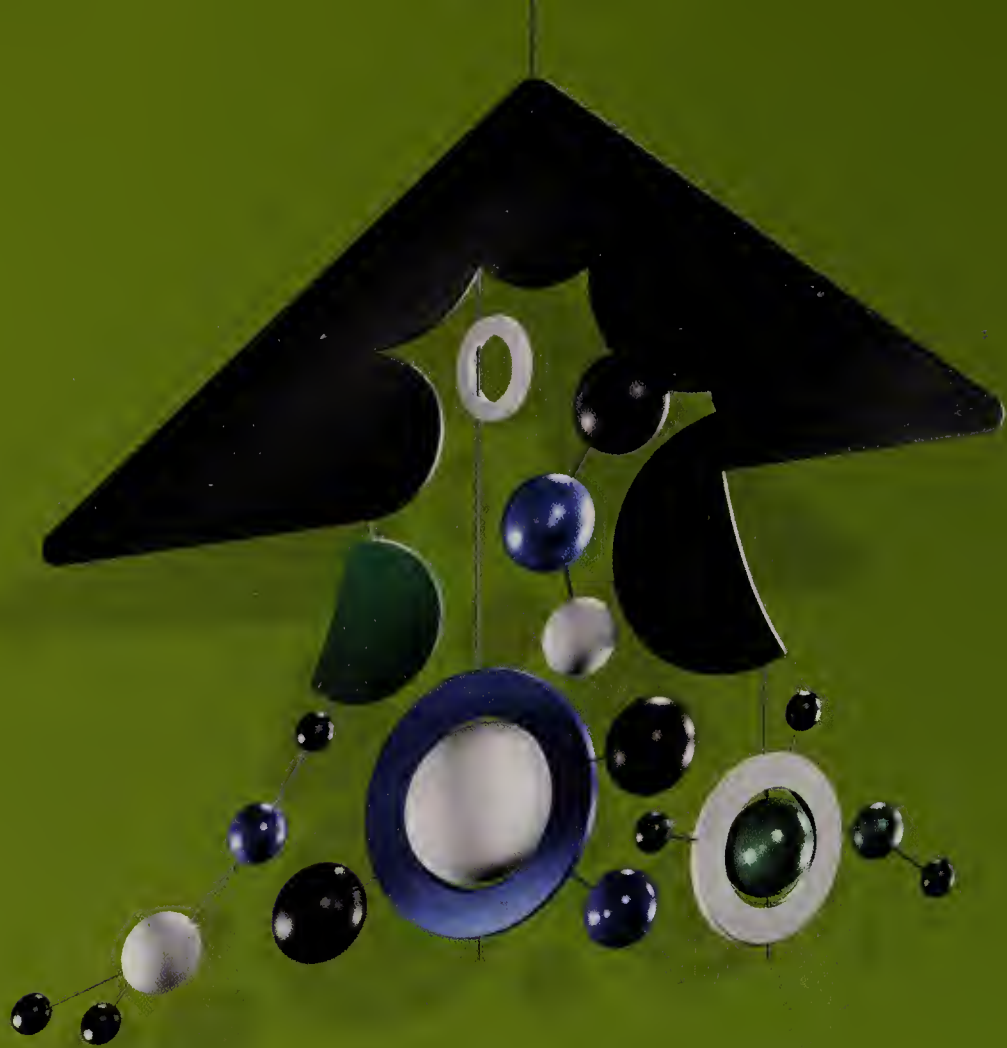
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